MENTAL RETARDATION ABSTRACTS

VOL. 5, NO. 4

OCTOBER - DECEMBER 1968

NATIONAL CLEARINGHOUSE FOR MENTAL HEALTH INFORMATION

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
HEALTH SERVICES AND MENTAL HEALTH ADMINISTRATION
NATIONAL INSTITUTE OF MENTAL HEALTH
Chevy Chase, Maryland 20203

This is the last issue of Mental Retardation Abstracts which will be published by the National Clearinghouse for Mental Health Information. Beginning with Volume 6, Number 1, the Abstracts will be published by the Division of Mental Retardation, Rehabilitation Services Administration. The entire mailing list which the Clearinghouse has developed over the past few years will be turned over to the Division of Mental Retardation, and the Division will continue to distribute the Abstracts.

Mental Retardation Abstracts is prepared under contract with the American Association on Mental Deficiency. It is available gratis to professional workers actively engaged in the field of mental retardation; other interested persons may purchase copies from the Government Printing Office. Professional workers who wish to receive the abstracts should write to the Division of Mental Retardation describing their professional activities in this field. Requests to receive the publication, address changes, and other communications concerning the abstracts (except orders to the Superintendent of Documents) should be addressed to:

Mental Retardation Abstracts
Division of Mental Retardation
Rehabilitation Services Administration
4040 Fairfax Drive
Arlington, Virginia 22203

Use of funds for printing this publication approved by the Director of the Bureau of the Budget, April 29, 1968.

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Subscription price per year in the United States, Canada, and Mexico, $3.00; other countries, $3.75. Single copies, $1.00. Persons wishing to purchase single copies or subscriptions should send their orders directly to the Superintendent of Documents accompanied by check or money order.

MENTAL RETARDATION ABSTRACTS

Volume 5, Number 4 October - December 1968

TABLE OF CONTENTS

TABLE OF CONTENTS

BROAD ASPECTS OF MENTAL RETARDATION

1529 U. S. Mental Retardation Division. *Facilities for Training to Meet the Needs of the Mentally Retarded.* Washington, D. C., Superintendent of Documents, U. S. Government Printing Office, 1967, 16 p. $0.15.

The federal government, in conjunction with colleges and universities, is initiating programs to train personnel in jobs that will aid the MR. Through matching funds, training facilities are being established under Part B Title 1 of the Mental Retardation Facilities and Community Mental Health Centers Construction Act of 1963 (P.L. 88-164). Requirements to establish these programs are presented along with a description of the scope of services, training, and demonstration techniques. The interdisciplinary concept is essential in the program. Policies adhere to those recommended by the President's Panel on Mental Retardation and the Intercouncil Committee on Construction of University-Affiliated Facilities for the Mentally Retarded. It is recommended that the consultation services of the Division of Mental Retardation be utilized in applying for the establishment of a training facility. Applications are given a preliminary review for accuracy of legal requirements, supporting information is considered, and the site is visited before the final decision is made. If the application is not approved, suggestions regarding the implementation of a program may be made by the division. Approval of an application is accompanied by a Notice of Grant Award stating the amount to be allotted. Referral is then made to the proper regional office. The grantee will work also with this agency during the construction phase. (No refs.) *G. Trakas.*

1530 Panel reaffirms need to attack retardation. *Medical World News*, 8(39):64, 1967.

The President's Committee on Mental Retardation reports that: (1) only half the nation's 25,000 school districts have special classes for slow learners, (2) 3/4 of the 201,000 institutionalized retardates live in facilities that are at least 50 years old, and (3) etiology is unknown in 3 out of 4 cases of MR. Progress in implementing the specific recommendations of the 1962 committee was reviewed; these recommendations included construction of 106 community centers and 14 university facilities. A bill now pending in the House would extend the building program 3 more years and add staffing subsidies. (No refs.) - *J. Snodgrass.*

1531 Demographic projections for the United States. *Clinical Pediatrics*, 6(9): 531, 1967.

The U. S. Children's Bureau estimates that total births may reach 4.9 million in 1970 and 5.6 million in 1975. This represents an overall increase of 34 percent from the 4.2 million of 1963. If present incidence rates remain constant, handicapping conditions in childhood will increase by 1970 to 2,624,000 for MR (up from 2,198,000 in 1960) and 437,000 for cerebral palsy (up from 366,000 in 1960). The incidence of low-birth-weight infants is also expected to increase by approximately 25 percent. (1 ref.) - *J. Snodgrass.*

1532 UNITED STATES HEALTH, EDUCATION, AND WELFARE DEPARTMENT. *Some Facts and Figures about Children and Youth.* (Children's Bureau.) Washington, D. C., U. S. Government Printing Office, 1967, 21 p. (Price unknown).

Surveys on children and youth in the United States indicate that: (1) in 1960 there were 2,180,000 MR children under age 21; (2) as of March 1965, 37,200 MR children were being served by public child welfare agencies in nearly all states, while 5,500 MR children were being served by voluntary agencies; (3) as of July 1966 there were 191 MR clinics in the country, 134 of which were either wholly or partially supported by funds provided by the Children's Bureau of the U.S. Health, Education, and Welfare Department; (4) as of the end of August 1966, laws pertaining to the screening of newborn infants for PKU had been enacted in 34 states; and (5) beginning in fiscal year 1967 a new program of grants authorized by amendments to the Social Security Act will provide for the training of professional personnel for health and related care of crippled children, particularly MR and multiply handicapped children. MR clinics supported by Children's Bureau funds provide for diagnosis, evaluation of growth capacity, development of treatment and management programs, interpretation of findings to parents, and follow up care and supervision. Professional personnel included in the programs authorized by the amendment to the Social Security Act are: physicians, dentists, audiologists, nurses, physical therapists, psychologists, and speech and language specialists. (No refs.) - *J. K. Wyatt.*

1533 MALIN, ARTHUR J. Mental retardation in India. *Journal of Rehabilitation in Asia,* 9(2):44-46, 1968.

This overview of the problem of MR in India includes an estimate of the number of MR children and the care available for them, an historical review of foundations and projects concerned with these children, and an account of the scope of the problem and the needs yet to be met. India, with an estimated 10,000,000 to 13,000,000 MR persons within her borders, has the largest number of MR children in the world. Latest information on the facilities available to care for these children indicates that there are 24 residential institutions with about 1,000 residents and 25 day schools with fewer than 500 children attending. Only 2 schools in India provide training opportunities for teachers of MR children, and salaries are so low that most teachers of the MR are not professionally trained. Fifty institutions accept MRs and about 6 sheltered workshops have been established for them. The Education Department in India is not concerned in any way with MR. In 1964 attempts were made to organize the All-India Association on Mental Retardation. Other programs have been started to educate and inform the public about MR. Once it becomes aware of its responsibilities and the very large job to be done, the Indian public should be allowed to show what it can accomplish. (No refs.) - *L. Spade.*

No address

1534 VAIL, DAVID J. *Mental Health Systems in Scandinavia.* Springfield, Illinois. Charles C. Thomas, 1968, 157 p. $8.00.

Although each Scandinavian country has a unique administrative structure which is responsible for carrying out government MR programs, the social policies of the 3 countries reflect a great deal of public commitment which is directed toward confronting the problems of MR in real and tangible ways. The Scandinavian concept of MR emphasizes the identification of individual intellectual, psychosocial, or somatic needs and the use of small groupings to meet them. MR programs are excellent. In comparison with United States facilities, state institutions in Norway and Sweden are smaller, have beautiful physical settings, offer a wide variety of programs, emphasize individual care, and have higher patient-staff ratios. Institutional services in Norway are provided at no cost to the patient. This guidebook to the organization of mental health and MR programs is intended to familiarize Americans with Scandinavian health problems. (111-item bibliog.) - *J. K. Wyatt.*

CONTENTS: General Observations; Psychiatric Diagnosis in Scandinavia; The Program in Norway; Mental Illness Hospitalization and Commitment Procedures and Forensic Psychiatry in Norway; Sterilization in Norway; Two Norwegian Programs of Interest; The Program in Sweden; Mental Illness Hospitalization and Commitment Procedures and Forensic Psychiatry in Sweden; Training in Social Medicine in Sweden; Two Swedish Programs of Interest; The Program in Denmark; Forensic Medicine in Denmark.

1535 KRATTER, FREDERICK E. Mental health services in the United States. *Nursing Mirror*, 123(19):vii-xiii, 1967.

State and federal facilities for mental health, especially MR, in the United States were surveyed during the period May 1956 to September 1958. Broad coverage included discussion of: (1) the varying range of incidence of MR, (2) racial and sociocultural considerations, (3) the President's charge to the Panel on Comprehensive Planning, (4) developments and recommendations on preventive psychiatry, (5) administrative organization, (6) acquiring and training staff, and (7) research. (No refs.) - *J. Snodgrass.*

Brockhall Hospital
Langho, Nr. Blackburn, England

1536 U. S. SOCIAL AND REHABILITATION SERVICE. *We Are Concerned.* (Division of Mental Retardation.) Washington, D. C., Superintendent of Documents, U. S. Government Printing Office, 1967, 16 p. $0.20.

The South Carolina Youth Task Force, TARS (Teens Aid the Retarded), and SWEAT (Student Work Experience And Training) are programs organized to educate youth and teenagers about MR, to provide personal contact with MRs, and to interest them in choosing vocations that serve MRs. The program planning and organizational structuring of the South Carolina Youth Task Force and TARS are done by the teenagers themselves. Adults are used for consultation and resource purposes. The Youth Task Force program has centered around educating South Carolina and southern youth about MR and encouraging them to start volunteer programs for MR children. The TARS program, which originated in Dallas, Texas, and has involved more than 2,000 teenagers, emphasizes personal contact with MRs and education about MR. The SWEAT program has provided 1,400 college students with the opportunity to work in 60 residential facilities, day care centers, state schools, and other institutions for MRs in the United States. These programs have provided service opportunities for young people and additional, committed, able manpower for the field of MR. (No refs.) - *J. K. Wyatt.*

CONTENTS: South Carolina Youth Task Force; A Vital Stimulus (Johnson, Earhart, Smiley, Ashmore, & Reid); Student Work Experience and Training; People Who Need Us (Eaton); TARS; A Special Concern (Cochran, Snapp, Smith, & Butler).

1537 JOHNSON, LEAH DALE, EARHART, STEV, SMILEY, LYDIA, ASHMORE, WARREN, & REID, PAT. A vital stimulus. In: U. S. Social and Rehabilitation Service. *We Are Concerned.* (Division of Mental Retardation.) Washington, D. C., Superintendent of Documents, U. S. Government Printing Office, 1967, p. 7-8.

The South Carolina Youth Task Force was formed in 1966 by members of a youth group serving as volunteers at Camp Hope, a summer camp for MRs, for the purpose of informing, encouraging, and helping other South Carolina youth groups to start programs for MRs in their communities. The organization worked with the Governor's Interagency Council on MR and developed a 1-year state and interstate program. During the "Youth Inquiry: MR" meetings which were held in 4 large South Carolina cities, Youth Task Force members discussed their experiences with MR children and asked and answered questions of high school students and their advisors. Adults were available for moral support and for resource purposes. In April 1967 the Youth Task Force sponsored an interstate conference (the Southeast Regional Youth Conference on MR) which was attended by young people from South Carolina, Georgia, Florida, and other southern states. The conference program was similar to that of the "Youth Inquiry: MR" program. The long-term goal of the Youth Task Force is to interest socially-sensitive young people in selecting vocations in the MR field. (No refs.) - *J. K. Wyatt.*

1538 EATON, DEIRDRE. People who need us. In: U. S. Social and Rehabilitation Service. *We Are Concerned.* (Division of Mental Retardation.) Washington, D. C., Superintendent of Documents, U. S. Government Printing Office, 1967, p 10-12.

The 1966 SWEAT (Student Work Experience And Training) summer program held at the Nebraska Psychiatric Institute provided 8 college students with opportunities to learn about and work with MRs in a variety of settings. Education about MR was provided through lectures, films, books, and personal contact with Institute staff members. The students also had personal contact with MRs while participating in the work of an MR nursery school, a facility devoted to MR education, an evaluation clinic, and a rehabilitation facility. SWEAT is a government sponsored program organized in 1966 for the purpose of educating teenagers about MR in order to

attract them to professions associated with the care and prevention of MR. In 1966 and 1967 1,400 teenagers participated in SWEAT programs. (No refs.) - *J. K. Wyatt.*

1539 COCHRAN, SCOTT, SNAPP, GINGER, SMITH, MARGARET, & BUTLER, PAM. A special concern. In: U. S. Social and Rehabilitation Service. *We Are Concerned.* (Division of Mental Retardation.) Washington, D. C., Superintendent of Documents, U. S. Government Printing Office, 1967, p. 14-15.

Teens Aid the Retarded (TARS) was organized in 1965 in Dallas, Texas, under the sponsorship of the Texas Association for Retarded Children in order to help MR children and to increase public awareness and understanding of MR. TARS's emphasis is on increasing member knowledge about MR through personal relationships with MR children and through orientation meetings featuring guest speakers who are knowledgeable in the field of MR. An activity in which a teenager is paired with an MR "buddy" for activities, lunch, and games is planned for each Saturday. TARS assumes responsibility for its own program and is an independent organization. Adults and the sponsoring agency supply advisory services and offer help and guidance when needed. Experiences with MRs have increased member insight about MR and have influenced some members to choose vocations in the field of MR. (No refs.) - *J. K. Wyatt.*

1540 FORRESTER, R. M. Journey with a handicap. *Special Education,* 56(3): 16-22, 1967.

The organization of care for the handicapped child must combine medical, educational, and social services to see that the best treatment is available. In the United Kingdom this combination of services is outmoded and ought to be replaced by a new cooperative and comprehensive system. The current condition of services is described in terms of 23 phases with detection and prevention, special unit and hospital care, a risk procedure, local authorities' role, continuity, educational policy, day and residential schools, and special schools all playing an important role in meeting the needs of the handicapped child. If the child reaches adulthood, he will in the last phase ask questions dealing with genetics and family planning. He will want to know if he can have children, if they will have his handicap, and if so, what can be done about it? A community medical-oriented program need not be rigid, but well planned phases should be developed so that invested money and professional competence can be made available to the handicapped individual, especially in the critical years after he has finished his schooling. (7 refs.) *J. Melton.*

No address

1541 WINICK, MYRON. Comprehensive approach to a child with a birth defect. *Bulletin of the New York Academy of Medicine,* 43(9):819-828, 1967.

A comprehensive approach to the problems of a child with a birth defect involves: (1) support of the family; (2) medical rehabilitation, education, and productive vocational support; and (3) acceptance by society. The medical profession should strive to help the handicapped individual learn to accept and live with his handicap and should help him reach his maximum potential with pleasurable and useful utilization of his leisure time. A major part of the burden involved in the development of the handicapped individual rests with the family. Parental fears, shock, and guilt feelings must be dispelled. Assistance with the cost of medical care can be obtained through community, voluntary, and governmental agencies. Medical programs in a central care agency which utilizes the team approach are most valuable. Via such an agency, hospitalization may take place if necessary, genetic counseling can be given, and the social worker can be consulted. The public health nurse serves the hospital and the family by acting as a bridge from clinic to home. All efforts should be made to absorb the child into the family structure. Institutionalization, if discussed, must be considered within the context of each family. Acceptance of the child with a birth defect rests upon educating the public through community programs. Segregation of handicapped children in special schools and programs is not the answer to eventual community placement and acceptance. These children need

to be understood and assimilated into normal activities whenever possible. (No refs.) *J. Melton.*

Birth Defects Clinic
Cornell Medical Center
New York, New York

1542 ASKIN, JOHN A., COOKE, ROBERT E., & HALLER, J. ALEX, JR., eds. *A Symposium on the Child.* Baltimore, Maryland, Johns Hopkins Press, 1967, 376 p. $10.00.

Twenty-three papers provide an historical and scientific summary of the pioneering pediatric achievements of former members of the Johns Hopkins Institutions as well as a survey of current pediatric development. Discussions include a number of surgical subjects, prematurity, immunity, development, MR, rehabilitation of CPs, human genetic defects, and growth and development control. This book should be of interest to doctors, pediatricians, medical students, and members of allied medical professions concerned with pediatric research and the care of children. (312 refs.) - *J. K. Wyatt.*

CONTENTS: The Biological Advantage of Man (Cooke); The History of the Harriet Lane Home (Parks); Esophageal Disorders in Children (Allison); Association of Metabolic Alkalosis and Potassium Deficiency with Cardiac Necrosis (Darrow); Circulating Autoantibodies and Human Disease (Thomas); A Current Survey of Clinical Experiences in Tissue and Organ Transplantation (Longmire); Hypothermia (Bigelow); Pulmonary Hypertension in Infancy (Dammann); Emergency Cardiac Surgery in the Newborn During the First Year of Life (Cooley); Rehabilitation of the Cerebral Palsy Patient (Baker); Early Experiences with the Treatment of Aortic Aneurysms (Bahnson); The Importance of Human Communication in Child Development (McHugh); Surgical Management of Chest Wall Deformities in Childhood (Ravitch); Hypospadias and Related Problems (Culp); The Mechanism of Antibody-Antigen Reaction and the Physiological Function of γ-Globulin (Najjar); Some Biologic Aspects of Premature Birth (Gordon); Control of Growth and Development (Bongiovanni); Insight into Human Genetic Defects Through Microbiological Tools (Alexander); Molecular Biology and Medicine (McCarty); Fashions in Infant Feeding (Evans); The Changing Face of Nutrition (Holt); Child Health in a Changing World (Wegman); History of Attitudes Toward the Mentally Retarded (Kanner).

1543 KANNER, LEO. History of attitudes toward the mentally retarded. In: Askin, John A., Cooke, Robert E., & Haller, J. Alex, Jr., eds. *A Symposium on the Child.* Baltimore, Maryland, Johns Hopkins Press, 1967, Chapter 23, p. 345-354.

The present era of lay and professional attitudes toward MR has been marked by the recognition that MR is not a unitary disease and by the involvement of psychologists, educators, parents, and, more recently, by the medical profession and representatives of every medical or allied professional specialty which could contribute to prevention and care investigations. It began around 1930 and was preceded by 2 post-eighteenth century eras. There is no historical evidence that consistent efforts to discover the causes of MR or to provide protection, training, and therapy for MRs were made prior to the eighteenth century. At that time the work of Itard, Voisin, Ferrus, Seguin, and Guggenbühl led to the beginning of the era of institutional expansion, which lasted until the end of the nineteenth century and was based on the belief that residential care and training would restore MRs to "normalcy." The failure of institutions in their efforts to cure MR coupled with the results of eugenics research led to the period of the great lull, which was marked by a loss of interest on the part of the medical profession and by an attitude that MRs were not helpless, but instead were deserving of their lot in life, a menace to civilization, and should be segregated from the rest of society by lifetime commitment to state institutions. Developmental studies by Locke and Rousseau, the percentage calculations of Hall, the study of intelligence by Binet and Simon, and the discoveries of mongolism, tuberose sclerosis, Pelizaeus-Merzbacher disease, and amaurotic family idiocy refuted the idea that MR is a homogeneous, unitary disease and laid the groundwork for the present era of research aimed at the prevention of MR. (16 refs.) - *J. K. Wyatt.*

1544 INSTITUTE FOR RESEARCH INTO MENTAL RETARDATION. *First Annual Report, 1, April 1966-31 March 1967,* London, England, 1967, 11 p.

The Institute for Research into MR, which is supported by a grant from the National Society for Mentally Handicapped Children, was established in London, England, in 1966 for

the purpose of (1) endowing, promoting, undertaking, coordinating, reviewing, and publicizing MR research; (2) maintaining a scientific library, a reprint and abstract service, and a current research information bureau; (3) originating conferences, symposia, study groups, and seminars on MR; and (4) reviewing public and voluntary services for MRs and their families. During the Institute's first year, library acquisitions including books, journals, reprints, and yearbooks were purchased or received as donations; a reference library with interlibrary loan facilities was opened; an information service focusing on the biological, medical, and psychological aspects of MR was initiated; and responsibility was assumed for conducting an experimental 5-week study program in behavioral disabilities for 20 University of Wisconsin graduate students. (No refs.) - *J. K. Wyatt*

1545 ZUBIN, JOSEPH, & JERVIS, GEORGE A., eds. *Psychopathology of Mental Development.* New York, New York, Grune & Stratton, 1967, 658 p. $22.00.

The dynamic approach to mental development which has emerged in recent years is based on a consideration of the interaction of social-cultural, hereditary, developmental, internal-environmental, and brain-function models. Epidemiological investigations have been responsible for much of the data on the environmental bases of MR, while genetic discoveries have identified the origins of many rare conditions which result in MR. Mental development is dependent on interaction between hereditary biological maturation and emotional and cognitive development. Preventive methods and therapies should be used whenever appropriate in order to reduce future MR. This book, which contains the proceedings of the fifty-sixth annual meeting of the American Psychopathological Association, includes 35 papers plus discussions and should be of interest to all professionals concerned with the etiologies, incidence, prevalence, effects, and prevention of MR. (1001 refs.) - *J. K. Wyatt.*

CONTENTS: Genetics and Neurophysiology; Social-Cultural and Paranatal Factors; Epidemiology; Behavior Characteristics and Learning; Observational Techniques and Measurement of Intelligence; Diagnosis and Rehabilitation.

1546 KETY, SEYMOUT S. Intelligence, biology and social responsibility. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development.* New York, New York, Grune & Stratton, 1967, p. 193-201.

Although biological factors are often considered to be the predominating influences on the development of intelligence, the power of biological intervention with drugs or electrode implants should not be exaggerated because it is likely that the identification of specific social factors having a differential effect on mental development may facilitate social changes which will prove to be more controlling than any foreseeable biological interventions. It may be that brain development occurs according to the patterns and types of early experiences as well as according to a plan established in the DNA of the fertilized ovum. Biochemical enzyme induction processes may work to enhance the development of exercised portions of the brain. Empirical evidence from animal studies suggests that normal maturation of the nervous system is at least partly related to appropriate sensory experiences which include sensory stimulation, confrontation of new situations, and problem-solving. When intelligent behavior is required in early life, the development of the biological systems required for intelligence may be facilitated. Consideration of theoretical, biological, and psychological evidence on the association between poverty and MR and other neuropsychiatric defects reveals that the largest category of MR is the result of failures in social metabolism. Many students of development believe that the incidence of MR would be more profoundly reduced if present biological, nutritional, obstetrical, and pediatric knowledge were applied to all segments of the population. (9 refs.) - *J. K. Wyatt.*

1547 DINGMAN, HARVEY F., TARJAN, GEORGE, EYMAN, RICHARD K., & MERCER, JANE R. Epidemiology of institutionalized mental retardates. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development.* New York, New York, Grune & Stratton, 1967, Chapter 12, p. 222-232.

A survey of 2 groups of patients admitted to Pacific State Hospital, Los Angeles, California, during the periods 1948-1952 and

1958-1962 revealed that although the population of the catchment area had decreased by 487,000 persons between 1950 and 1960, there were almost twice as many hospital admissions during the second period as during the first. Admissions during the later period were characterized by (1) an increase in the number of mildly MR Caucasian patients, (2) an increase in the number of non-Caucasian SMRs, and (3) a higher rate of admission from the Caucasian population. Consideration of the occupational and educational status of patients' fathers revealed that while there was relatively no change in their occupational status during the periods considered, fathers in the 1958-1962 group had a higher level of education than those in the 1948-1952 group. A comparison of the ethnic status and level of education variables of the hospital population with those of the base population of the catchment area showed a lack of proportion, which may indicate that this institution is now serving a different group than it did during the earlier period. (10 refs.) - *J. K. Wyatt.*

1548 GRUENBERG, ERNEST M., & KIEV, ARI. The age distribution of mental retardation. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development.* New York, New York, Grune & Stratton, 1967, Chapter 13, p. 233-243.

Conceptualizations of MR based on a "fixed condition" notion are being challenged by epidemiological evidence provided by the age-specific prevalence rates of MR established in the Onondaga, Eastern Health District, Swedish Rural, England and Wales, North Swedish, and Formosa community-wide surveys. Although the within-survey findings of these investigations cannot be compared because of methodological differences, a comparison of the between-survey findings shows that in each group prevalence of MR after age 14 was less than half as high as at age 14. The decrease in prevalence rate after age 14 may be due to (1) improved functioning of the MRs; (2) lowered demands by society, specifically the school system; and (3) reduced environmental demands which obscure persistent handicaps. Empirical studies are needed to provide data to validate these findings and to add to knowledge concerning benign, self-limiting, and neglected adult MR. (21 refs.) - *J. K. Wyatt.*

1549 CRANEFIELD, PAUL F. Historical perspectives. In: Philips, Irving, ed. *Prevention and Treatment of Mental Retardation.* New York, New York, Basic Books, 1966, Chapter 1, p. 3-14.

Research findings concerning MR must be based on a firm scientific foundation, avoid drawing conclusions from naive population genetics and naive eugenics, and clearly differentiate between established scientific facts and inferential data obtained from poorly conceived or controlled populations or from pedigree studies. The investigation of MR which officially began with Paraclesus' treatise, *De Generatione Stultorum,* (circa 1530) was seriously hampered by the progressive degeneration theory of Morel published in 1857. Morel, whose conclusions were based on family pedigree studies, did not hold that hereditary progressive degeneration was inevitable. However, his successors, Dugdale and Goddard, conducted additional family pedigree investigations and were influenced by the eugenics movement, which led them to conclude that degeneration was a natural phenomenon and the reverse of evolution. Their simplistic solution to the problems of genetic inferiority was that MRs should stop reproducing. This thinking led to the destruction of the special schools for MRs which had been the primary achievement of the nineteenth century and to a cessation of efforts to train and educate MRs. In Germany it was used to justify activities aimed at the 'purification' of the native racial stock. (22 refs.) - *J. K. Wyatt.*

1550 MALAMUD, NATHAN. The neuropathology of mental retardation. In: Philips, Irving, ed. *Prevention and Treatment of Mental Retardation.* New York, New York, Basic Books, 1966, Chapter 3, p. 24-32.

Although some cases of MR are classified as having no definite brain pathology and others as having nonspecific formations, brain pathology operates throughout the whole range of intelligence, and failure to identify it, particularly in cases of nonspecific formations, may be due to misinterpretation of the neuropathologic data caused by lack of knowledge about the specific nature of the brain injury. An analysis of

classifications assigned to 1,410 MRs as a result of autopsy investigations revealed that 65 percent had development-inhibiting brain malformations, 25.5 percent had acquired lesions due to destructive processes, 5 percent had metabolic disorders, 2 percent had neoplastic disorders, and 2.5 percent had no definite pathology. Eighteen percent of the brain malformations were specific, (gross deviations), and 82 percent were nonspecific (subtle or mild deviations). The discoveries of PKU and of the chromosomal abnormalities in mongolism and the subsequent investigations of their specific metabolic effects on brain development have furthered the understanding of nonspecific brain malformations and indicated the need for similar investigations of other nonspecific malformations. (22 refs.) - *J. K. Wyatt.*

1551 WAISMAN, HARRY A. Recent advances in mental retardation. In: Philips, Irving, ed. *Prevention and Treatment of Mental Retardation.* New York, New York, Basic Books, 1966, Chapter 10, p. 125-143.

Biologic factors which have been related to MR are premature birth, genetic and chemical abnormalities, and other inborn errors of metabolism. While the specific relationship between MR and premature birth is unresolved, the dangers of prematurity appear to be due to immaturity of the central nervous system which may cause it to be more susceptible to damage during the deposit of myelin around the nerves and during the formation of internuncial and glial connections. Genetic and biochemical causes of MR account for 10 to 15 percent of the MRs in institutions. Among the recently identified diseases due to genetic or biochemical error are phenylketonuria; histidinemia; homocystinuria; cystathioninuria; hyperglycemia; hyperglycinuria; hypersarcosinuria; urinary excretion of 3, 4-dihydroxyphenylalanine; succinicaciduria; citrullinuria; Hartnup disease; hydroxykynureninuria; maple sirup urine disease; hypervalinemia; hyperprolinemia; and Joseph's disease. The careful screening and evaluation of patients with specific birth defects who evidence MR and failure to thrive should lead to the identification of a large number of additional errors of metabolism. (90 refs.) - *J. K. Wyatt.*

1552 PERRY, STEWART E. Some theoretic problems of mental deficiency and their action implications. In: Philips, Irving, ed. *Prevention and Treatment of Mental Retardation.* New York, New York, Basic Books, 1966, Chapter 21, p. 349-386.

In order to make progress in the study of MR there is a pressing need for a fundamental reconceptualization which should begin with a redefinition of MR. It should (1) remove the retardate from membership in a homogeneous category where retardation is viewed as an isolated, permanent, and irreversible phenomenon of constitutional or organic origin and (2) promote consideration of the individual, interdependent complex of interpersonal, sociocultural and constitutional or physiologic processes which make up the presenting situation and history of each retardate and which, when examined, may identify areas of intervention leading to reversibility or improvement. The term mental deficiency includes a large number of very different kinds of conditions which have only one common element--presumed or demonstrated subnormal intelligence. In an individual-centered inquiry, the total situation of the MR may be defined as being one of subnormal intelligence, social failure, organic failure, inherited defect, a pattern of interpersonal relations, or a sociocultural pattern, depending on the method of inquiry used and on the way in which the worker views the MR person. MR presents problems to the retardate himself, to his family, and to the community. The reversibility-irreversibility controversy can be avoided by concentrating on identifying forces that influence stability and change in order to further the understanding of factors which result in the deterioration, stabilization, or remedy of the MR pattern. (52 refs.) - *J. K. Wyatt.*

1553 STEDMAN, DONALD. Changing concepts for programs for the retarded. In: Philips, Irving, ed. *Prevention and Treatment of Mental Retardation.* New York, New York, Basic Books, 1966, Chapter 22, p. 387-397.

A variety of issues involved in the changing of concepts concerning MR and in the alteration of professional and lay attitudes toward actual and potential MR program development directly affect both the rate and

quality of program planning. These issues include: biologically determined MR versus sociocultural factors; professional competition for MR programs; "neurosis structuris"; competition with other health, education, and welfare issues on a national and local level; changing the consumer, a technique of both anti-poverty and MR programs; the utilization of research facilities; and the attraction of volunteer and service groups. Major services which must be provided by an average community of 100,000 population in order to combat MR are: diagnostic and counseling services for MRs and their families; welfare, social, and educational services; public health nursing and homemaker services; 40 special education classes for EMRs; 12 special education classes for TMRs; a day-care and recreation center for 23 SMRs; vocational counseling, job training, and placement services; sheltered workshops; activity centers; and residential centers. In order to assure coordination of services, activities and programs, the country can be divided into directional segments, states subdivided into counties, and cities divided into wards or block groups. The identification of specific geographic characteristics which are the result of population mobility and expansion will permit a more effective provision of services. Community conservatism that presents an obstacle to new programs calls for re-education and planning geared to existing political conditions. (1 ref.) - *J. K. Wyatt.*

1554 TARJAN, GEORGE. Mental retardation: Implications for the future. In: Philips, Irving, ed. *Prevention and Treatment of Mental Retardation.* New York, New York, Basic Books, 1966, Chapter 25, p. 429-444.

Progress in MR prevention and treatment during the last 10 years has been provided by President Kennedy, the parents of MRs, federal agencies, several state departments, the American Association on Mental Deficiency, the interest of scientists, and by the awards and grants of the Joseph P. Kennedy, Jr., Foundation. However, progress in the future will continue to be hampered by the lack of a specific definition of MR until such time as chemical or neurophysiologic explanations of memory, learning, and conditions resulting from psychological, social, and cultural deprivation clarify the relationship between behavior and its biochemical correlates and settle the nature-nurture controversy. Future progress will also require (1) the development of epidemiologic research methods which will provide precise incidence and prevalence data; and (2) adequate planning and substantial funding to enable services to keep pace with advancements in knowledge. In the future early and comprehensive diagnosis will include ascertainment of the cause, degree and type of MR; evaluation from somatic, psychologic, social, educational, and vocational viewpoints; determination of secondary handicaps; immediate and long-term planning; counseling needs; and parent counseling. Present knowledge will be implemented to develop programs designed to significantly decrease the frequency of MR and to facilitate additional etiologic identifications, new and improved treatment methods, recommendations concerning child-rearing practices, and educational advances. (37 refs.) *J. K. Wyatt.*

1555 U. S. WELFARE ADMINISTRATION. *Clinical Programs for Mentally Retarded Children.* Hormuth, Rudolph P. (Children's Bureau,) Washington, D. C., Superintendent of Documents, U. S. Government Printing Office, 1966, 65 p.

Outpatient clinical facilities operated by interdisciplinary teams providing comprehensive evaluation, treatment, or follow-up services for children diagnosed as or suspected of MR are listed for the 50 states, the District of Columbia, and Puerto Rico. A majority of the facilities receive full or partial support from the Children's Bureau either through Maternal and Child Health or Crippled Children's Funds. Clinic information is non-evaluative and includes data on clinic location, telephone number, the medical director, the geographic area served, the age range accepted for services, sponsoring agencies, and hours of operation. (No refs.) - *J. K. Wyatt.*

1556 U. S. CHILDREN'S BUREAU. *New Frontiers in Mental Retardation.* (Clinical Directors' Mental Retardation Conference held June 5-7, 1966, Asilomar, California.) Washington, D. C., 1966, 129 p.

The second conference for clinical directors of MR programs sponsored by the Children's Bureau of the Department of Health, Education, and Welfare focused on the extension

of MR services into the community. Conference agenda included discussions of professional MR training programs, the prevention of MR, the function of state institutions, and the importance of advance planning in the development of effective services. Group sessions were concerned with staffing patterns of clinic programs, with the role of the clinic in carrying out metabolic disease management programs, and with opportunities for education and training in MR clinics. (132 refs.) - *J. K. Wyatt.*

CONTENTS: The Children's Bureau Mental Retardation Clinics: A Look to the Future (Oberman); Role of a State Health Department in Mental Retardation (Davens); Community Planning for the Mentally Retarded in Los Angeles County (Mooring); Child Development Traveling Clinic Project in Southern California: A Report of the First Seven Years, 1959-1965 (Koch, Baerwald, McDonald, Fishler, & Rock); Motivational and Emotional Factors in the Behavior of the Retarded (Zigler); Special Education and the Director of a Mental Retardation Clinic (Goldstein); A Simple Chromatographic Screening Test for the Detection of Disorders of Amino Acid Metabolism (Efron); Diagnosis and Treatment of Metabolic Disorders (Snyderman); Mental Retardation--Past, Present and Future (Deisher); University Affiliated Centers for Mental Retardation: The Georgetown Experience (Calcagno & Clayton).

1557 OBERMAN, J. WILLIAM. The Children's Bureau mental retardation clinics: A look to the future. In: U. S. Children's Bureau. *New Frontiers in Mental Retardation.* (Clinical Directors' Mental Retardation Conference held June 5-7, 1966, Asilomar, California.) Washington, D. C., 1966, p. 1-17.

In addition to their function of providing quality care for MRs and for their parents, the 134 Children's Bureau MR Demonstration Clinics have determined patient needs, established optimal treatment methods, and are now equipped to advise communities in the development of local MR programs. Additional services for MR children and their parents which must be provided in future programs include comprehensive care for multiply handicapped MRs, specialized services for children with brain damage or specific learning defects, psychiatric treatment, nutritional services for children with PKU, and genetic counseling. Congressional legislation passed since 1963 has provided for (1) expansion of services for children in the retarded or potentially retarded group, (2) extension of services to children from low income families, (3) maternity and infant care programs aimed at reducing the incidence of MR, (4) training of medical and para medical professional personnel, (5) construction of university-affiliated MR centers, (6) construction of community facilities for MRs, and (7) the development of comprehensive plans to combat MR. (No refs.) - *J. K. Wyatt.*

1558 DAVENS, EDWARD. Role of a state health department in mental retardation. In: U. S. Children's Bureau. *New Frontiers in Mental Retardation.* (Clinical Directors' Mental Retardation Conference held June 5-7, 1966, Asilomar, California.) Washington, D. C., 1966, p. 18-23.

State Health Departments can promote excellence in human development by reformulating and coordinating existing health programs so that services focus on (1) the prevention of MR and (2) the provision of a continuum of care for MRs. Obstacles to coordinated programs include public apathy and lack of interest and the treatment of MR as a separate entity requiring specialized services rather than as an aspect of development. Significant improvement in the provision of services for MRs is represented by federally sponsored medical care programs such as a comprehensive care program for mothers, infants, young children, and adolescents; the comprehensive child care "600 Series"; the Medical Assistance Program for the poor; and Medicare. (No refs.) - *J. K. Wyatt.*

1559 GOLDSTEIN, HERBERT. Special education and the director of a mental retardation clinic. In: U. S. Children's Bureau. *New Frontiers in Mental Retardation.* (Clinical Directors' Mental Retardation Conference held June 5-7, 1966, Asilomar, California.) Washington, D. C., 1966, p. 73-78.

In order to provide complete diagnostic facilities, directors of MR clinics should expand their programs to include psychoeducational, diagnostic, and remedial services. Diagnostic data in the psychoeducational field can be used to suggest optimal remedial procedures for learning disabilities.

Comprehensive diagnostic and remedial programs should widen the scope of a clinic by providing (1) a more complete evaluation of the child, (2) the possibility of obtaining a clearer picture of the relationship between physical and intellectual processes, (3) the possibility of specific treatment feedback, and (4) clinic participation in broad multidisciplinary university training programs. (No refs.) - *J. K. Wyatt.*

1560 CALCAGNO, PHILIP L., & CLAYTON, ROBERT J. University affiliated centers for mental retardation: The Georgetown Experience. In: U. S. Children's Bureau. *New Frontiers in Mental Retardation.* (Clinical Directors' Mental Retardation Conference held June 5-7, 1966, Asilomar, California.) Washington, D. C., 1966, p. 111-115.

University centers concerned with developing a comprehensive approach to MR and chronic disease should consider certain basic questions. How can the administration of new, multidisciplinary programs be coordinated with presently operating university organizations? How can discipline integration be accomplished? How much emphasis ought to be placed on training and how much on service? How can specialized centers be most effectively utilized? Can manpower needs be better satisfied by more specialists or by better trained generalists? What kind of foci are needed to insure continuity of prescribed care by parents? The answers to these questions are diverse and will be determined by the unique needs of each locale. University centers will achieve their maximum potential if each one develops its own program geared to meet the problems of its community. (No refs.) - *J. K. Wyatt.*

1561 SCARCELLA, MARIO. Nosography and antinosography in child psychiatry. *Acta Paedopsychiatrica,* 34(7/8):208-219, 1967.

The problems associated with the classification and the nosography of mental diseases in children become more and more complex and controversial. Differing disorders and syndromes are indicated by identical names, this is manifested in old writings on mental pathology. The author gives some examples of confusing classification and discusses the ambiguity of present terminology (borderline, pseudo-insufficiency, pre-psychosis, etc.). The existing anarchy impedes reciprocal understanding and scientific progress. This is more obvious in child psychiatry than in adult psychiatry. At the root of antinosographical orientation is the diversity of the theoretical approaches. The psychodynamic Anglo-Saxon schools have particularly influenced this development. In order to avoid confusion, 2 areas must be clearly distinguished. In the diagnostic procedure one tends more and more not to distinguish dynamic psychopathological and diagnostic nosographical interpretation. Though the plastic nature of the child's personality makes the delimitation of clinical pictures more difficult, it does not appear opportune not to perfect present nosographia. At the clinical scientific level it is necessary to refer to simple, uniform, not too rigid nosographical (or purely syndromal) schemes. It is a historical fact that all progress of medicine is due to better knowledge of specific diseases. Therefore it is justifiable to think that the future of child psychiatry also is related to progress in nosography. Present knowledge offers some fixed points. It is essential to agree on the construction of a common language. On the other hand the drawbacks of an unduly nosographical schematism must be avoided. Finally the author emphasizes the validity of the clinical nosographical method, based on the medical-scientific concept of the "natural disease entity." (29 refs.) - *Journal summary.*

Via Universita 16
Messina, Italy

1562 LELAND, HENRY. Adaptation and research. *Project News of the Parsons State Hospital and Training Center,* 3(3): 6-9, 1967.

The problems faced by psychological research in classifying and diagnosing MR stem from the psychometric and/or medical terms used in defining this field. Psychometrically, the psychologist works as a technician in administering tests and interpreting scores; assuming a 1:1 relationship between score and behavior, he then makes corresponding recommendations. If he adopts the medical approach, however, he observes the individual's behavior and then bases his decision concerning the MR on behavior modification and the interrelationship of this behavior with developmental expectations and the expectations of the community. Problems

may arise with the latter approach if, regardless of IQ and CA, Ss are grouped in their learning task to gain an across-the-board view of MR. Moreover, psychologists should not attempt to compare a homogeneous unit such as mongoloids with microcephalics because both groups share the behavior characteristics of other groups. Research can be done with MRs if they are not treated as a generic whole and if it is recognized that research exists to ascertain laws of learning relevant to child development as well as to determine the laws of cognition related to levels of adaptation. A functional approach in design is suggested to study and select Ss based on homogeneity of manner in which they respond to their environment, level of development related to CA, and level of social demands in their setting. (No refs.) - *G. Trakas.*

Parsons State Hospital and
Training Center
Parsons, Kansas

1563 GOODMAN, LAWRENCE & *ARNOLD, IRENE. Training and utilization of non-professional personnel in services for the retarded. *Mental Retardation (AAMD)*, 5(6): 11-14, 1967.

A project supported by the U. S. Children's Bureau and directed by the Retarded Infants Services in New York led to the training and utilization of low-income nonprofessionals to work without supervision as well as with professionals in providing services for the MR. Groups were instructed 4 hours daily for 3 months by a social worker who used visual methods (films and field trips) and guest speakers to present information on family factors, social work, language development, and therapeutic approaches. Sheltered workshops, children's day centers, or MR clinical centers were among facilities used as a means for allowing trainees to test their concepts. Graduates available for employment are now being used as recreation aides in programs for the blind retarded, as rehabilitation aides, case aides, or teacher assistants. Graduates appear to have a higher level of job readiness than is generally found at this level. Hopefully, individual fulfillment for the graduate and better care for the MR will emerge as a result of this program. (7 refs.) *G. M. Nunn.*

*New York Medical College
Flower-Fifth Avenue Hospitals
New York, New York

1564 SAVINO, MICHAEL T., KENNEDY, RALPH C., & BRODY, STUART A. Using the non-professional in mental retardation. Paper presented at the 91st annual meeting of the American Association on Mental Deficiency, Denver, Colorado, May 15-20, 1967, 25 p. Typed.

In order to alleviate the current critical manpower shortage in the field of MR, the role of the nonprofessional must be reconsidered and revamped. For example, nonprofessional, economically deprived workers, especially those from lower socioeconomic groups, may work effectively with MRs within their own subculture. The inauguration of new roles and personnel categories has been stimulated by: (1) unique problems of high-risk populations, (2) changing patterns in staff utilization, and (3) job displacements due to automation and educational deprivation. Among the factors influencing the higher risk population are the lower class groups' under-utilization of services and their poor perception of the problem. Use of the indigenous nonprofessional in working with the MR can aid in decreasing the stigma of retardation, breaking through the "strangeness" barrier raised by their cultural background, and increasing the knowledge about MR for this high-risk population. The role of the non-professional should extend beyond utilization as a cultural bridge. The effectiveness of the volunteer is limited by the lack of full-time involvement. Training approaches should involve role playing and the team approach, with considerable emphasis on job training. Instructions should be explicit, repetitive, and concrete. Competition with professionals should be minimized. (26 refs.) *B. Bradley.*

California State Department
of Mental Hygiene
Sacramento, California

1565 THULINE, HORACE C. Some research specifics from data generalities. Paper presented at the 91st annual meeting of the American Association on Mental Deficiency, Denver, Colorado, May 15-20, 1967, 4 p. Typed.

The value of a data collection project at the Rainier School (Buckley, Washington) is discussed on the basis of specific applications for research. Examination of data can aid in more precise descriptions of known, as well as new, factors in MR. It also can facilitate increased recognition of new

relationships and construction of hypotheses to be tested. Illustrations from the 1966 data collection project in the Rainier School suggest that joint data can add to a more precise description of known factors in retardation. For example, the sizes of diagnostic groups can be determined for an institution, state, or region; this permits a comparison of groups in different institutions and different states. The availability of this type of data makes possible objective testing of some hearsay concepts and provides extensive group comparisons in medical, behavioral, and social areas. In the future, data collection projects will undoubtedly be very productive in establishing a more methodological approach to problem solving within the field of MR. (No refs.) - *B. Bradley.*

Rainier School
Buckley, Washington

1566 PFEIFFER, ERIC, EISENSTEIN, RICHARD B., & DABBS, E. GERALD. Mental competency evaluation for the federal courts: I. Methods and results. *Journal of Nervous and Mental Disease*, 144(4):320-328, 1967.

In this investigation of the relationship between law and psychiatry, the process of psychiatric evaluation of mental competency for federal courts is analyzed, with the primary focus on the problem of competency determination. The criteria for competency to stand trial are imprecise, for the first serious attempt to establish psychiatric criteria for competency was not published until 1965. Moreover, the legal criteria are sparse and vary according to the state. The charts of all federally indicted prisoners admitted for competency examination for a 6-year period were reviewed and abstracted. A series of examinations including physical, neurological, laboratory and psychological tests were used in most cases, and each patient was interviewed by a psychiatrist for 5-8 hours. After these examinations, a competency board of 3 psychiatrists made a formal assessment on the basis of test data and personal interview. Eighty-nine pretrial exams were completed on 85 individuals (2/3 males; 91 percent white; CAs from 17 to 63). The results indicated that the Ss were accused of various crimes and all the major categories of the American Psychiatric Association were present except the psychophysiological category. Sixty-two percent were found to be competent. A diagnosis of schizophrenia or MR did not necessarily result in a judgment of incompetency. Although there were few requests from the courts, the psychiatrists often made judgments about criminal responsibility at the time of the disposition of the case. The differences between determination of mental competency for trial and determination of criminal responsibility are discussed. (11 refs.) - *B. Bradley.*

Duke University Medical
Center
Durham, North Carolina 27706

1567 U. S. PUBLIC HEALTH SERVICE, NATIONAL INSTITUTE OF MENTAL HEALTH. *Architecture for the Community Mental Health Center.* Jones, Coryl LaRue, ed. New York, New York, Mental Health Materials Center, 1967, 168 p. (Price unknown).

The topic of the 1965 Rice Design Institute III, which was conducted by the School of Architecture of Rice University (Houston, Texas) and sponsored by the National Institute of Mental Health, was the designing of community mental health centers to serve 6 different population situations: a metro-suburban-rural situation, a research-oriented situation, an urban slum ghetto, a state and general hospital association, a midwestern rural situation, and a heterogeneous urban situation. Physical facilities and psychiatric programs tailored to meet the unique requirements of each problem situation were designed by teams of specialists including a psychiatrist, a community psychiatrist trainee, an architect, and 5 advanced students of architecture. Programs which involved new combinations of community facilities and organizations were encouraged. Some facilities were designed to include MR care either on an outpatient or inpatient basis. Psychiatrists and architects involved in planning for community mental health facilities and concerned with the concepts of community definition, diagnosis, and assessment will find the data presented in this volume of interest. (No refs.) - *J. K. Wyatt.*

CONTENTS: What Is the Rice Design Fete? Community Mental Health Center (CMHC)/Metro-Suburban-Rural Situation; CMHC/Research-Oriented Situation; CMHC/Urban Slum Ghetto; CMHC/State and General Hospital Association; CMHC/Midwestern Rural Situation; CMHC/Heterogeneous Urban Situation; Comparisons, Common Points, Critiques.

1568 HOROWITZ, HAROLD. The program's the thing. *American Institute of Architects Journal*, 47(5):94-100, 1967.

In order for the design of a building to meet the needs of the building's user, a detailed and informative program must be available to the architect. The major classes of information that should be included are: (1) the objectives of the master plan; (2) special restrictions and limitations on design which should be clearly stated in the architect's program; (3) physical characteristics of the site; (4) site development requirements; (5) functional requirements for the facility as a whole and for principal areas in detail; (6) numbers and kinds of people who will use different areas of the building; (7) specific facility requirements (both general and room-by-room or type of space); (8) relative location and interrelationship of spaces; (9) budget; (10) flexibility for future growth and changes in function; and (11) relative order of importance to be considered in allocating funds. The behavioral sciences contribute to programing procedures the knowledge of techniques for objective interviewing to improve communication between architect and client, representative group sampling to provide information for improving planning criteria, and development of better techniques for organizing information used in making decisions. The study of role relationships in other professions and organizations suggests that such a study in the architectural profession might be of great importance in enabling the architect to obtain a program that fits his client's needs and still harmonizes with his own professional concepts. (No refs.) - *E. F. MacGregor.*

No address

1569 U. S. SOCIAL AND REHABILITATION SERVICE, DIVISION OF MENTAL RETARDATION. *Mental Retardation Film List.* (Prepared by The National Medical Audiovisual Center.) No date. 60 p.

The pamphlet lists "nonprofessional" films which deal with the nature, causes, general treatment, and prevention of MR as well as "professional" films concerned with the specifics involved in the diagnosis, clinical treatment, and rehabilitation of MRs. Producer, physical description, language, distributor, and annotation are provided for each listing. A title index and a list of distributors are also given. One hundred and forty-five films, 3 film strips, 2 slides, 2 audiotapes, and 1 videotape are considered. - *J. K. Wyatt.*

MEDICINE AND ALLIED SCIENCES

Diagnosis (General)

1570 RICHMOND, JULIUS B., & GARRARD, STERLING D. Some current concepts of mental retardation: Implications for diagnosis. In: Philips, Irving, ed. *Prevention and Treatment of Mental Retardation.* New York, New York, Basic Books, 1966, Chapter 2, p. 15-23.

In order to make judgments concerning the etiology of MR and to plan for management, physicians must evaluate a wide variety of biological, sociocultural, and psychological data and arrive at an integrated picture of their developmental implications for each individual. In addition to providing help for the family, physicians can make a significant contribution in the areas of prevention and early detection measures. Early detection may minimize the handicap and maximize the child's functioning. Diagnosis can be facilitated if an effective developmental appraisal and an evaluation of sensory function is included in the general neurologic appraisal. Families of MRs have predictable periods of crisis during which the physician may use his counseling and guidance abilities to help the family identify and utilize the appropriate services available in the community. Developmental studies which have aided in understanding MR include: neurological investigations on the effects of poverty on the infant and on the

effects of deprived environments; biological investigations which have identified PKU and galactosemia as inborn errors of metabolism and which are expected to detect other specific metabolic errors that affect cerebral functioning; neurochemical studies on the biochemical organization of the cortex; neurophysiological advances which permit earlier detection of sensory disorders, seizures, and communication difficulties; and studies on the effects of socio-cultural factors and on intellectual development. (16 refs.) - *J. K. Wyatt.*

1571 DREW, ARTHUR L. The clinical neurology of mental retardation. In: Philips, Irving, ed. *Prevention and Treatment of Mental Retardation.* New York, New York, Basic Books, 1966, Chapter 4, p. 33-43.

Neurologic diagnostic examination of MR individuals requires more elaborate techniques than are used with normal adults and children. It must draw on the methodologies of biology, biochemistry, electrophysiology, psychology, and psychiatry. Moreover, unless a history and examination lead to a direct diagnosis, it may also involve chromosome-culture and karyotyping when extracerebral developmental anomalies are present; electroencephalography; electroretinography; spinal fluid electrophoresis, and/or biopsy of cerebrum, peripheral nerve and rectum when progressive cerebral degeneration is suspected; and/or radiographic studies of skull and vertebral column, ventriculography, pneumoencephalography, and arteriography in order to identify other conditions. Evaluation procedures aimed at assessing the functional status of the nervous system may include developmental testing, the establishment of an SQ, a psychological examination, and a psychiatrically-oriented history of the family's child-rearing practices. Categories of disease which may be identified by differential neurological diagnosis are: inborn errors of metabolism, certain neuronal storage diseases (the sphingolipidoses, the mucopolysaccharidoses and the glycogen storage diseases), white-matter degeneration conditions, neuroectodermal dysplasias, a variety of autosomal- and sex-chromosomal aberrations, and neurologic conditions which result from damage during the prenatal period. Mildly retarded and intellectually handicapped children present special diagnostic difficulties. In order to identify neurologic deficits in these children, pediatric neurologists should consider soft signs and symptoms of cerebral dysfunction, and should use a wide variety of psychological test instruments. (1 ref.) *J. K. Wyatt.*

1572 KOCH, RICHARD A. Diagnosis in infancy and early childhood. In: Philips, Irving, ed. *Prevention and Treatment of Mental Retardation.* New York, New York, Basic Books, 1966, Chapter 5, p. 44-58.

Accurate diagnosis of MR in infancy and early childhood should be based on an interdisciplinary evaluation which considers psychological, medical, educational, and social factors. A medical evaluation should include a medical history, a physical examination, and appropriate laboratory procedures. A developmental evaluation may be used to assess present rate of progress and provide neurologic observational data, but it should not be used as a predictor of future development. The interdisciplinary team at the Child Development Clinic at Children's Hospital, Los Angeles, California, is led by a pediatrician who is assisted by a child psychiatrist, a neurologist, a clinical psychologist, a social worker, and a public health nurse. The skill and knowledge of speech and hearing clinicians, nutritionists, teachers, physical therapists, laboratory technicians, and other medical specialities are also available. The integration of appropriate professional support is necessary if each child is to be helped to develop his fullest potential. This was confirmed by diagnostic experience and knowledge gathered during a 5-year evaluation of 705 children by the Traveling Clinic Project in Southern California, a demonstration diagnostic clinic staffed by the Los Angeles Children's Hospital Child Development Clinic. The data gained in counseling their families on caring for these MRs stress the importance of adequate early diagnosis and evaluation, home care for young MRs, and evidence the need for expanded public and private health services aimed at the prevention of MR producing conditions. (15 refs.) - *J. K. Wyatt.*

326-079 O - 68 - 2

1573 DOLL, EDGAR A. Recognition of mental retardation in the school-age child. In: Philips, Irving, ed. *Prevention and Treatment of Mental Retardation.* New York, New York, Basic Books, 1966, Chapter 6, p. 59-68.

Criteria which should be identified by schools before establishing a diagnosis of MR are: evidence of social and mental inadequacy, developmental immaturity, poor prognosis for assuming full personal responsibility at maturity, constitutional origin of MR, and irreversibility of MR. Programs for the evaluation of referrals should include a teacher interview, psycho-educational testing, a consideration of the child's cumulative school record, a parent interview, and the use of the resources of other disciplines as needed. Early identification of MR is important for effective management and for preventive and ameliorative treatment. The problem of establishing school identification programs which will insure early referrals is the most serious one encountered in dealing with MR in the schools. (No refs.) - *J. K. Wyatt.*

1574 PAINE, RICHMOND S., & OPPÉ, THOMAS E. *Neurological Examination of Children.* William Heinemann Medical Books, 1966, 279 p. $8.00.

Designed not as a text of pediatric neurology, but as an aid to the psychologist, pediatrician, and neurologist engaged in clinical practice, this text deals with the developmental significance of signs and their possible interpretations. The areas included in this practical neurological examination of children are: developmental history, particular symptoms, physical examination, and such aspects of the neurological examination as speech psychometric tests, all cranial nerves tests, tests of the head, neck, spine, posture and gait, motor, sensory and autonomic functions, and reflexes. Certain chemical and electrical tests, X-ray tests, and isotope scanning procedures are also discussed. (165 refs.) *C. A. Pepper.*

CONTENTS: The History; Some Particular Symptoms; The General Physical Examination; Neurological Examination--General Comments; Mental State; Speech; Special Tests of Cerebral Function; Head, Neck and Spine; Cranial Nerves; Posture and Gait; Motor Function; Reflexes, Responses and Infantile Automatisms; Sensory Function; Autonomic Function; Special Investigations.

1575 BAYLOR UNIVERSITY COLLEGE OF MEDICINE. Neurology Department. *Neurological Diagnostic Techniques.* Fields, William S., ed. Springfield, Illinois, Charles C. Thomas, 1966, 429 p. $16.00.

This collection of the papers presented at the Thirteenth Annual Houston Neurological Symposium is concerned with the many clinical and laboratory techniques used in the diagnosis of CNS and neuromuscular disorders and is intended to be of value to the physician and surgeon. Detection of inborn errors of metabolism in patients with neurological disease or MR can be accomplished by chromatography or other tests but is particularly difficult for the lipidoses and leukodystrophies. Examination of the cerebrospinal fluid can lead to the diagnosis of many CNS diseases including Tay-Sachs disease. Laboratory aids were able to establish definite diagnoses, reaffirm the effectiveness of prevention, and establish epidemiological facts during the 1964 epidemic of St. Louis encephalitis in Houston, Texas. Although brain biopsy has value in selected cases, most information can be obtained by other means. Muscle biopsy, however, is one of the most important diagnostic procedures in patients with neuromuscular disease. Other techniques which are becoming increasingly valuable in diagnosis are EEG, radioisotopic scanning methods, and ultrasonic encephalography. Recent advances in neuroradiologic diagnostic techniques include the subtraction technique, air myelography, and small vessel angiography. Despite these advances, the history and clinical examinations remain of utmost importance, and new approaches are being used which augment their significance. Current techniques of psychological testing are being altered, but research in this area is a slow, tedious process. (454 refs.) - *R. Froelich.*

CONTENTS: Detection of Inborn Errors of Metabolism in Patients with Neurological Disease (Moser); A Selected Review of Reactions of the Cerebrospinal Fluid to Disease (Tourtellotte); Diagnostic Methods for Virus Diseases of the Central Nervous System and Their Application During the 1964 Houston Encephalitis Epidemic (Melnick & Phillips); The Value of Cerebral Biopsy (Terry); Muscle Biopsy as a Clinical Diagnostic Aid (Engel & Brooke); New Developments in Clinical Electroencephalography (Gastaut); Radioisotopic Scanning Methods. I. Use of Positron-emitting Isotopes in the Diagnosis of Intracranial Disease (Sweet, Ojemann, Aronow, & Brownell); Radioisotopic Scanning Methods. II. Scanning with IHSA-131, Chlormerodrin HG-203 and Chlormerodrin HG-197 (Brinkman); The Value of Ultrasonic

Encephalography as an Adjunct to Neurology and Neurological Surgery (Barrows & Kurze); Recent Advances in Neuroradiologic Diagnostic Methods and Techniques (Schechter); Bedside Examination of Special Sensory and Motor Functions (Bergman); Special Methods to Elicit Neurological Deficits (Nathanson); Useful Techniques in the Neurological Examination of Infants and Children (Christoff); Psychological Testing in Neurological Disorders (Goldstone); Computer Applications to Clinical Problems (Randt & Korein).

1576 NAGLER, BENEDICT. Neurology of mental retardation. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development*. New York, New York, Grune & Stratton, 1967, Chapter 27, p. 495-501.

In order to diagnose the effects of brain damage on intellectual functioning, an evaluation should be made of the intellectual achievement potential which existed prior to the brain damage, the percentage of damage in terms of this original potential, and the area or areas of the brain damaged. The presence of MR cannot be proven by evidence of arrest or deceleration of brain development, decrease of intellectual functioning, and/or neurologic deficits *per se*. Although these data are suggestive of MR, by themselves they do not provide the discriminating evaluation of intellectual functioning necessary for accurate diagnosis. (11 refs.) *J. K. Wyatt.*

1577 LIBERSON, W. T. EEG and intelligence. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development*. New York, New York, Grune & Stratton, 1967, Chapter 29, p. 514-543.

Research evidence which clarifies some of the relationships between EEG patterns and intelligence indicates that (1) the EEGs of mentally disturbed, MR, or behaviorally disturbed children may be used in conjunction with other clinical and psychological data for evaluation, management, and prediction outcome; and (2) the EEG data of adults and elderly persons, when used with combined intelligence tests, may prove helpful in defining the presence of organic factors in cases of severe or specific abnormality and in distinguishing between psychotic and nonpsychotic depressions. Significant correlations have been found between conceptual performance, or "active intelligence," and EEG abnormalities. Vocabulary, or "passive intelligence," scores are not correlated with EEG abnormality. These relationships are particularly apparent in defective children and elderly individuals. Future research should be directed toward understanding observed interrelationships between EEG, alpha continuity, physiological tone, evoked potential and alpha frequency data. (51 refs.) - *J. K. Wyatt.*

1578 SJÖGREN, IRÈNE. Echoencephalographic measurement of ventricular size in children. *Developmental Medicine and Child Neurology*, 10(2):145-158, 1968.

The energy transferred during an echoencephalographic examination is considerably below the level at which harmful effects may occur, even in small infants. The interface between cerebrospinal fluid and brain parenchyma can be recorded by echoencephalography provided that the skull is not more than 3 mm thick. Echoencephalography, modified according to measurement of the ventricular size and represented graphically, is a reliable method in the differential diagnosis between normal and dilated ventricular systems, fairly reliable in evaluating the size of the ventricles in infantile hydrocephalus and in follow-up examinations of such patients, and is suitable for a screening diagnosis before neuroradiological examinations. It may also be helpful in choosing the puncture site for ventriculography in patients with asymmetrical ventricular systems, in determining whether cerebral expansions, observed by cerebral pneumography, are solid tumors or fluid-filled cysts, and in diagnosing some gross cerebral malformations and intracerebral cysts. Echoencephalographic examinations of normal infants and children show that the lateral ventricles in newborn babies are somewhat wider than in older children, and that the upper limit for the body of normal lateral ventricles is 1/3 of the diameter of the head. (30 refs.) *Journal summary.*

Department of Pediatrics
University Hospital
Uppsala, Sweden

1579 ALTER, MILTON. Dermatoglyphic analysis as a diagnostic tool. *Medicine*, 46(1):35-56, 1967.

A review of the literature on dermatoglyphic abnormalities presents the basic facts about the procedure of dermatoglyphic analysis. The advantages of dermatoglyphic analysis include ready accessibility for study, simplicity, quickness, inexpensiveness, and the ability to inspect for abnormalities immediately after birth. The variability of patterns is great, and even identical twins can be differentiated from each other. The groups of patterns include finger patterns, finger ridge count, palmar patterns and landmarks, palmar creases, and foot patterns. Autosomal aneuploidy that can be studied by dermatoglyphics include mongolism, trisomy 18, trisomy 15, translocations, and deletions. Sex chromosome aberrations such as Turner's syndrome and Klinefelter's syndrome can be diagnosed by dermatoglyphics, and several other disorders that are caused by a single abnormal gene have been associated with distinctive dermatoglyphic patterns. Some of these are Wilson's disease, Huntington's chorea, the De Lange syndrome, the Ellis-Van Creveld syndrome, the Holt-Oram syndrome, and ectodermal dysplasia. Disorders with uncertain genetic transmission such as idiopathic MR, congenital heart disease, epilepsy, psoriasis, anencephalus, oral-facial-digital syndrome, and schizophrenia have also been associated with deviating dermatoglyphic patterns. Exogenous influences such as thalidomide, rubella, and the disturbances that underlie cerebral palsy may have an effect on dermal patterns. (126 refs.) - *R. Froelich.*

Department of Neurology
University of Minnesota
Minneapolis, Minnesota 55455

1580 MILANI-COMPARETTI, A., & GIDONI, E. A. Pattern analysis of motor development and its disorders. *Developmental Medicine and Child Neurology*, 9(5):625-630, 1967.

Motor development as a progressive evolution of patterned structure of movement can be used diagnostically in cerebral palsy cases whose impaired CNS flexibility restricts the development of many of these patterns. Although this approach, which is still called a motoscopic examination, is still being worked out, it already seems to be yielding more consistent and reliable diagnostic clues. The repertoire of pathognomonic patterns so far includes: specific stimulation, synergic stimulation, and nonspecific stimulation. (29 refs.) - *C. A. Pepper.*

Centro A. Torrigiani C. R. I.
Via de Camerata, 8
Firenze, Italy

1581 MOISEEVA, N. I. Systematization and classification of reflexes and pathological symptoms. *Journal of the Neurological Sciences*, 5(2):377-387, 1967.

A classification of reflexes, signs, and synkinesiae that is based on phenomenological principles is proposed which should help the neurologist assimilate the innumerable symptoms and terms he is required to master. Previous classifications were contradictory and provided no possibility of systematizing; phenomena were grouped according to their final motor effect or motor display. In the proposed system, the large number of motor responses are divided into 46 groups with subgroups determined by area of stimulation and technique of elicitation. The motor response is scored from 1 to 5; 3 signifies a normal reflex and grades to either side indicate degrees away from normal. This system is easily adaptable to computer analysis. An orderly list of over 400 reflexes and signs have been elaborated with this phenomenological classification; moreover, the classification allows the introduction of new groups or subgroups when necessary. A schematic representation of the classification identifies types of motor responses, nature of the motor act under investigation, method of elicitation and site of elicitation. (56 refs.) *R. Froelich.*

Institute of Experimental Medicine
Academy of Medical Sciences of
the U. S. S. R.
Leningrad, U. S. S. R.

1582 CUNNINGHAM, T. M. Detection of foetal distress. *Nursing Mirror*, 126(3): 37-39, 1968.

An instrument to continuously monitor and record fetal heart rate during labor has been developed. A crystal pick-up attached to the mother's abdomen by suction transmits a signal which can be broadcast, metered, or graphed without the need for an

attendant. It is designed to filter out extraneous sounds and has given satisfactory results in 90 percent of cases. Illustrative recordings of actual cases are presented. (No refs.) - *D. Martin.*

Department of Scientific and
Industrial Research
Auckland, New Zealand

Prevention and Etiology (General)

1583 PHILIPS, IRVING, ed. *Prevention and Treatment of Mental Retardation.* New York, New York, Basic Books, 1966, 463 p. $12.50.

Contributions from a wide variety of specialists working in close collaboration will be needed in order to develop prevention, treatment, and rehabilitation programs which will integrate MR individuals into the community and prevent their segregation and isolation. The fields of psychiatry, pediatrics, public health, pathology, neurology, biological chemistry, genetics, sociology, social welfare, education, vocational rehabilitation, psychology, community organization, and law are represented. In this discussion of some of the clinical issues that confront professional MR workers it is recommended that future program planning emphasize the provision of better and more comprehensive programs which include all areas of concern and provide sound medical care for the total population, both the normal and the handicapped. Mildly retarded children from poor or culturally-deprived environments represent one major group (85 percent) of often neglected MRs for whom programs of early identification and intensive help are needed. This book should be of primary interest to clinicians of any discipline involved in MR. (568 refs.) - *J. K. Wyatt.*

CONTENTS: Historical Perspectives (Cranefield); Some Current Concepts of Mental Retardation: Implications for Diagnosis (Richmond & Garrard); The Neuropathology of Mental Retardation (Malamud); The Clinical Neurology of Mental Retardation (Drew); Diagnosis in Infancy and Early Childhood (Koch); Recognition of Mental Retardation in the School-Age Child (Doll); The Mentally Retarded and the Family (Begab); Developmental Problems of the Mentally Retarded Child (Bayley); Children, Mental Retardation, and Emotional Disorder (Philips); Recent Advances in Mental Retardation (Waisman); Notes for a Sociology of Mental Retardation (Perry); Genetic Counseling and Eugenics (Day); Medical Treatment of the Mentally Retarded (Cohen); Mental Retardation and Psychotherapy (Szurek & Philips); Preschool Programs for the Retarded (Goldstein); The School Years--Program Design (Brabner); Consultation and Special Education (Berlin); Vocational Rehabilitation (Galazan); The Mentally Retarded Adult in the Community (Katz); Changing Concepts of Residential Care (Bramwell); Some Theoretic Problems of Mental Deficiency and Their Action Implications (Perry); Changing Concepts for Programs for the Retarded (Stedman); The Organization of Community Services for the Mentally Retarded (Chope); Legal Aspects of Mental Retardation (Boggs); Mental Retardation: Implications for the Future (Tarjan); Index.

1584 PERRY, STEWART E. Notes for a sociology of prevention in mental retardation. In: Philips, Irving, ed. *Prevention and Treatment of Mental Retardation.* New York, New York, Basic Books, 1966, Chapter 11, p. 145-176.

Although the basic professional responsibilities of clinicians involve meeting the needs of individual MR children and adults in a professional setting, those interested in making a major contribution to the field of MR must be active in the broad areas of public health and social reform and must work for the elimination of the social and cultural conditions that produce the largest single class of MRs. The present social order produces MR by poverty, racial discrimination, tax protection of the advantaged classes to the detriment of the disadvantaged, public school programs aimed at

meeting the needs of the articulate and influential families of the middle class and of rising members of the working class but not of the culturally deprived, and all public programs which have little meaning within the lower class sub-culture. Contrast in values in which, for example, members of the privileged classes benefit from the social order while lower classes are deprived of the services needed to stop the wholesale production of MR can be found throughout the American social order. The use of sociocultural methods to attack the sociocultural processes in MR would not only wipe out the cases of MR caused by cultural deprivation, but because of their higher incidence in culturally deprived areas would also affect the number of cases of MR owing to birth injuries, postnatal traumas, infections, and related etiologies. (42 refs.) - *J. K. Wyatt.*

1585 DAY, ROBERT W. Genetic counseling and eugenics. In: Philips, Irving, ed. *Prevention and Treatment of Mental Retardation.* New York, New York, Basic Books, 1966, Chapter 12, 177-198.

Primary prevention of genetically determined diseases associated with MR may be accomplished either through genetic counseling aimed at the assessment of reproductive risk, or by the termination of pregnancy when the risk of metabolic error is high. Secondary prevention involves massive screening of the newborn and early initiation of appropriate treatment when metabolic disorders are discovered. Genetically determined disorders associated with MR have been identified for the mechanisms of the presence of a single gene (autosomal dominant, autosomal recessive, or X-linked recessive), chromosomal abnormalities, complex malformations, incompatibilities, segregating traits, and polygenic traits. MR is a symptom for many pathologic processes, and its elimination will require the identification of entities, understanding of etiology, prevention or early diagnosis, and successful treatment. As knowledge about the treatment of inherited diseases increases, the number of potential carriers also increases and intensifies the need for realistic approaches to their control. Additional research is needed to answer questions about the harmful or beneficial effects of deleterious genes on carriers. (27 refs.) - *J. K. Wyatt.*

1586 COHEN, PETER. Medical treatment of the mentally retarded. In: Philips, Irving, ed. *Prevention and Treatment of Mental Retardation.* New York, New York, Basic Books, 1966, Chapter 13, p. 201-220.

Medical treatment and prevention of MR require an awareness of the diverse number of conditions with which MR is associated, accurate diagnosis and specific therapy prescription, evaluation of the degree of MR to facilitate counseling and planning for education or training, and awareness of available community facilities. In addition to etiologies of metabolic defects and chromosomal abnormalities, prenatal causes of MR have been associated with maternal diabetes, mellitus, myasthenia gravis, idiopathic thrombocytopenic purpura, hypothyroidism, and with the effects of specific medications, maternal infections, and excessive ionizing radiation dosage. Recognition of factors which may cause MR during the natal and postnatal periods and of the effects of psychosocial factors on development may help in the prevention of MR. (38 refs.) - *J. K. Wyatt.*

1587 BERG, J. M. Causes of mental subnormality. *Nursing Mirror,* 125(1): xiii-xv, 1967.

MR is the result of a wide range of hereditary and environmental causes. Some genetic causes (and examples of each) are: (1) chromosome aberrations caused by recessive genes in clinically normal parents (phenylketonuria); (2) metabolic disorders (galactosemia); (3) sex-linked diseases (hyperuricemia); (4) chromosome morphology (Down's syndrome--extra chromosome, *cri-du-chat*--deleted chromosome); and (5) extra X chromosome. While there is some understanding of chromosomal anomalies, a great deal is still unclear about the origin of cell division mechanisms and the way in which clinical effects arise. Environmental factors are more definitely pinpointed as specific causes of MR. Some environmental causes (and examples) are: various maternal infections transmitted *in utero* (rubella, syphilis), chemical substances (thalidomide), mechanical trauma (birth injuries), after birth infections (encephalitis), chemical agents (lead poisoning), head injuries (due to blows or falls), and impaired oxygenation (as with cardiac arrest). (No refs.) - *E. F. MacGregor.*

Kennedy-Galton Centre
Harperbury Hospital
Herts, England

1588 ALLEN, GORDON. Genetics and the prevention of mental subnormality. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development.* New York, New York, Grune & Stratton, 1967, Chapter 11, p. 202-221.

Research and planning for the prevention of MR should be based on the recognition that etiologies are multiple and mingled, occur along a continuum of intensity, and are not necessarily related to their effects on a 1 to 1 basis. Regardless of where causes are located on the intensity continuum, the magnitude of their effects seems to be related to specific threshold distributions, repair processes, and functional compensation and to the dependence of these factors on other contributing causes. However, specific prevention programs can be planned when causes are considered in isolation. For example, environmental improvement methods can be used to reduce or prevent subcultural mental defect, research aimed at the discovery of improved medical practices should reduce the number of pathological brain defects, and the prevention of mutations or high-risk marriages and conceptions should result in an absence of severe hereditary MR. Research findings indicate that MR and social delinquency or social degradation are not synonymous. Therefore, prevention efforts should be concerned with obvious pathology and educational problems rather than with the reduction of social problems. (62 refs.) - *J. K. Wyatt.*

1589 JERVIS, GEORGE A. Some observations on the problem of heredity and environment in mental retardation. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development.* New York, New York, Grune & Stratton, 1967, p. 262-269.

The concept of a continuum of developmental causality is valid and includes the effects of both environmental and genetic mechanisms. Differences in intellectual endowment are a product of the variability which characterizes genetic inheritance. Etiological investigations have revealed a dichotomy between SMR with identifiable brain damage due to exogenous, altered genetic, or dominant genetic factors and mild MR in which clinical symptoms and signs of brain damage may be totally absent or minor and transitory. This genetic-environmental dichotomy represents 2 antithetical points of view which advocate 2 opposite modes of fighting MR. However, the artificial nature of the genetic-environment dichotomy for both SMR and mild MR is illustrated by (1) data indicating that environmental factors do cause a spectrum of brain damage, the signs of which may not always be elicited in cases of mild MR because of deficiencies in diagnostic tools; and (2) clinical observations of chromosomal abnormality and metabolic aberration in cases of mild MR which have demonstrated a genetic basis for mild MR. The problem of heredity and environment is complex. The use of a clinical approach may produce factual observations on which new theories can be constructed. (No refs.) *J. K. Wyatt.*

1590 BONGIOVANNI, ALFRED M. Control of growth and development. In: *A Symposium on the Child.* Aslin, John A., Cooke, Robert E., & Haller, J. Alex, Jr., eds. Baltimore, Maryland, The Johns Hopkins Press, 1967, Chapter 17, p. 255-273.

Since growth and development can be affected by factors in the external environment such as emotional disturbance and inadequate nutrition as well as by factors in the internal environment such as major disturbance in chemical composition, genetic factors, the CNS, pituitary activity, the functioning of the thyroid hormone, and endocrine secretion, an appreciation of the psychopathology of disease can provide increased understanding of the usual control of human growth. Painstaking clinical observations will lead to the identification of additional factors which create growth and development problems in childhood. Pediatricians need to be alert to the early symptoms of cretinism. When untreated this condition results in diminution of linear growth, of osseus maturation, and of intellectual development. (No refs.) - *J. K. Wyatt.*

1591 CHASE, HELEN C. Perinatal and infant mortality in the United States and six west European countries. *American Journal of Public Health,* 57(10):1737-1748, 1967.

A comparative study of infant and perinatal mortality in the United States and 6 west European countries showed the U. S. in seventh place, which suggests that considerable improvement could be made if certain

actions were taken. Ranked in order of infant mortality per 1,000 live births, the countries evaluated were: Sweden, 12.4; Netherlands, 14.4; Norway, 16.8; Denmark, 18.7; and the United Kingdom (Scotland, England, and Wales), 19.6. Data were derived from vital statistics for 1964 or 1965, from contracted investigators, and from the Conference on the Perinatal and Infant Mortality Problem of the U. S. (1965). Excluding non-white births in the U. S., the infant mortality rate decreased from 24.8 to 21.6. Although differences in registration practices in other countries exist, they do not fully account for the low U. S. ranking. Over the last 15 years the U. S. has dropped from a rank of second to a rank of fifth in perinatal mortality. This has been brought about by a rapid decline of mortality in Denmark, the Netherlands, and Norway. Demographic factors such as geographic variation, mother's age or pariety, or non-white births may account for some but not all of the magnitude of deaths. There are also differences of obstetric care, but the overall differences are not great. There may be an increased incidence of low birth weight in the U. S. Concerted efforts by the medical profession, hospitals, government, community agencies, and mothers will be necessary to improve the relative status of the U. S. (19 refs.) - *R. Froelich.*

Office of Health Statistics
Analysis
National Center for Health Statistics
Washington, D. C. 20201

1592 Who's for screening? *Lancet*, 2(7518): 706-707, 1967.

The procedures utilized in presymptomatic medicine and screening of apparently healthy populations for pathological conditions require constant re-examination. One screening project involving a well population in Sweden detected 12 percent in need of follow-up, 30 percent of whom had no cause for the abnormality found on the screening test. This high "no-diagnosis" rate is a reason for caution. Even routine batteries of tests for hospitalized patients have questionable value. Moreover, economic considerations should be taken into account, and a distinction must be made between screening for research and screening for case finding. Five criteria useful in selecting diseases suitable for screening are: frequent occurrence, seriousness, the presence of a single sign with a high probability for detection, the simplicity and economy of the tests, and a likelihood of treatment. What is needed is the ability to detect all viable disease routinely. (6 refs.) - *R. Froelich.*

No address

Etiologic Groupings

Infections, Intoxication, and Hemolytic Disorders

1593 SINGER, DON B., RUDOLPH, ARNOLD J., ROSENBERG, HARVEY S., RAWLS, WILLIAM E., & BONIUK, MILTON. Pathology of the congenital rubella syndrome. *Journal of Pediatrics*, 71(5):665-675, 1967.

Autopsy studies of 18 children with the congenital rubella syndrome (CRS) revealed a group of lesions previously not associated with the rubella virus (RV). One stillborn, 16 children aged 11 to 270 days, and a 6-year-old with the CRS were autopsied and organ virus cultures were taken. Abnormalities present included: patent ductus arteriosus in 100 percent of the Ss, nodular sclerosis in 27.5 percent, systemic vessel sclerosis in 16.5 percent, chronic interstitial pneumonitis in 77 percent, and right pulmonary isomerism in 1 S. Spleen was enlarged in 22 percent and decreased in size in 16.5 percent. Extramedullary hematopoiesis (EMH) persisted in the spleen or lymph nodes up to 109 days. Germinal centers occurred early in 22 percent of the spleens. Thymus was involuted in 10 Ss. Portal triad fibrosis was present in 16.5 percent of the livers with EMH persisting in 7 Ss. Mononuclear inflammation was seen in 16.5 percent of the testes. Three Ss had undescended testes, 2 had bilateral indirect inguinal hernias, and

1 had hypospaidas. Chronic interstitial nephritis was found in 22 percent of the Ss. Unilateral adrenal cortical cytomegaly occurred in 16.5 percent of Ss. Mononuclear meningitis was present in 66 percent of the Ss with 33 percent of brains showing small areas of necrosis. Abnormal bone formation accompanied irregular capillary growth. Optic abnormalities included: cataracts in 54.5 percent, spherical lenses in 27 percent, severe iridocyclitis in 91 percent, and ciliary body necrosis in 82 percent. Multiple systemic manifestations of the RV are a result of interruption, retardation, or disorganization in maturation of tissue with or without an inflammatory reaction. (42 refs.) - *A. C. Molnar.*

Texas Children's Hospital
Houston, Texas 77025

1594 Prophylaxis in rubella. *British Medical Journal*, 4(5573):183-184, 1967.

The successful use of gamma-globulin for protection of the human fetus and the feasibility of other modes of therapy such as a vaccine have made prophylaxis in rubella a more optimistic possibility. A number of attempts at passive immunization have been made in the 25 years since the teratogenic properties of rubella virus have been recognized. The failures of these studies may have been due to the small number of patients studied and the problems involved in detecting atypical or subclinical cases. During the 1954-1962 period, gamma-globulin was given to 36,577 rubella contacts. Although the attack-rate became as high as 3.25 percent, the overall attack-rate in 15,173 women exposed to family contacts was 1.95 percent. This is low compared to data from other surveys, which estimated an attack-rate of 12 to 30 percent in unprotected women. Of the 424 infants born of mothers who had had rubella, 13 percent had defects, 9.2 percent of which were of the rubella syndrome type. Antibody tests for rubella show a variable incidence of women having rubella neutralizing antibody, but the results generally indicate an infection rate of about 30 percent. The development of the hemagglutinin-inhibition test should improve the ability to study this problem. What is needed is a rubella vaccine. Although an attenuated rubella vaccine is being developed and tested, it will be several years before such a vaccine will be available for general use. (17 refs.) *R. Froelich.*

1595 SCHACHER, STEPHEN A., FUCCILLO, DAVID A., GITNICK, GARY L., SEVER, JOHN L., & HUEBNER, ROBERT J. Oral administration of attenuated rubella virus vaccine (HPV-77). *Journal of Pediatrics*, 72(2):255-257, 1968.

The oral administration of attenuated rubella virus vaccine (HPV-77) produced no illness, increase in antibody titer, or excretion of virus in the throat swabs, anal swabs, urine, or serum of 12 adult male volunteers. The HPV-77 virus was administered to 6 Ss as a liquid vaccine in enteric coated capsules and to 6 additional Ss as a lyophilized powder in enteric coated capsules. The Ss were housed in a single large isolation room for the entire 21-day period of the study. Various doses of virus were given, and an effort was made to ensure that the enteric coating of the capsules would maintain viability of the virus after passage into the small bowel. All Ss were tested for hemagglutination inhibition and neutralizing antibody. Only 1 S had detectable levels; all the others were serologically negative before the study and remained so after the vaccine was given. This study did not support the previous report that the oral route can be useful for administration of rubella vaccine. It may be that the titer of virus used for vaccination was insufficient to produce enteric infection or that the enteric coating of the capsules was insufficient. (6 refs.) - *R. Froelich.*

National Institute of
Neurological Diseases
and Blindness
National Institutes of Health
Bethesda, Maryland

1596 SEVER, JOHN L., FUCCILLO, DAVID A., GITNICK, GARY L., HUEBNER, ROBERT J., GILKESON, MARY RUTH, LEY, ANITA C., TZAN, NANCY, & TRAUB, RENEE G. Rubella antibody determinations. *Pediatrics*, 40(5):789-797, 1967.

Hemagglutination inhibition (HI), interference neutralization (Neut), fluorescence (FA), and complement fixation (CF) were compared for demonstration of rubella antibody. Sera from Ss with recent and remote acquired rubella and from Ss with congenital rubella were studied in addition to commercial gamma-globulin. Susceptibility to or presence of congenital rubella can be tested with the HI, FA or Neut tests. Acute rubella can be diagnosed best with the CF or

HI tests. The HI and Neut tests are equally good for testing antibody titer of gamma-globulin. The HI antibody level rises on the day of onset of rash and persists for at least 10 to 20 years. The HI test is rapid and easily done, but care must be taken during the procedure because laboratory conditions (such as cell concentration macro vs micro method, tween-ether treated antigens, and pH) can markedly influence the results. These methods of rubella antibody determination allow accurate diagnosis of rubella and detection of susceptibility. (16 refs.) *W. A. Hammill.*

National Institute of Neurological Diseases and Blindness
Department of Health, Education and Welfare
Bethesda, Maryland 20014

1597 BAYLOR RUBELLA STUDY GROUP. Rubella: Epidemic in retrospect. *Hospital Practice*, 2(3):27-35, 1967.

A retrospective evaluation of the 1964 rubella epidemic in Houston, Texas, demonstrates the need for community resources to handle such problems and increases understanding of the rubella syndrome. An account of the post-epidemic experiences confronted at Baylor University College of Medicine is considered valuable because it shows the manner in which a community mobilized its health resources to manage the long-range problems that the affected children presented. It also provides new data on the pathogenesis of congenital rubella. The initial clinical picture was unclear, and the first clear evidence was found 3 months after the beginning of the epidemic. A group of infants with thrombocytopenia were found to differ from the classical rubella syndrome and therefore were considered to have an "expanded" rubella syndrome. Very early in the epidemic, the diagnostic and follow-up services in Houston were centralized. The discovery that some infants were still excreting rubella virus led to new experiments and new conclusions. There were 20 deaths, 14 of which occurred in the first 6 months of life, and the medical problem was acute. The MR, cerebral palsy, cataracts, cardiac defects, and the other long-term problems fostered by the epidemic required complex facilities which brought out the significance of the concept of community medicine. An important aspect of long-term management was parental education by counseling and discussion groups. (No refs.) - *R. Froelich.*

Baylor University College of Medicine
Houston, Texas

1598 Rubella study puts defect rate at almost 90%. *Medical World News*, 8(39): 35, 1967.

Ninety percent of infants born to mothers infected with rubella virus in the first trimester were found to have congenital defects including cataracts, cardiac malformations, hearing deficit, small head size, MR, slow motor development, growth failure, and speech difficulties. Between 15 and 20 percent of mothers with serologically-confirmed rubella during the second trimester gave birth to less seriously damaged infants. The teratogenicity of the virus is far greater than previously suspected. (No refs.) - *J. Snodgrass.*

1599 MENSER, MARGARET A., ROBERTSON, S. E. J., DORMAN, D. C., GILLESPIE, AILSA M., & MURPHY, A. M. Renal lesions in congenital rubella. *Pediatrics*, 40(5):901-904, 1967.

A male infant (birth weight, 3.05 Kg) with the congenital rubella syndrome was found to have agenesis of 1 kidney. When cultured after removal, the bilateral cataracts noted in the S at age 18 weeks were found to contain rubella virus. Rubella virus was grown from the urine until treatment with gamma-globulin was administered. Renal function was abnormal initially but subsequently returned to normal. Intravenous and retrograde pyelograms and radioisotope renal scan done at age 13 months revealed a normal right kidney and a non-functioning left kidney. Serum rubella antibodies were elevated at ages 4 and 13 months. Rubella infection *in utero* during the development of the kidney probably caused the anomaly. Studies of

renal function should be carefully done in Ss with the congenital rubella syndrome to detect renal anomalies. (16 refs.) - *W. A. Hammill.*

P. O. Box 34
Camperdown, New South
Wales 2050
Australia

1600 RORKE, LUCY B., *FABIYI, AKINYELE,, ELIZAN, TERESITA S., & SEVER, JOHN L. Experimental cerebrovascular lesions in congenital and neonatal rubella-virus infections of ferrets. *Lancet*, 2(7560):153-154, 1968.

Transplacental infection of ferret embryos with rubella virus was established by virus isolation from maternal and embryonic tissues. Examination of serial sections of these embryos showed vascular degeneration of intracranial branches of the internal carotid arteries. Acute lesions of similar but more dramatic nature were also found in the brain of a 35-day-old ferret puppy which had been inoculated with rubella virus 24-48 hours after birth. The similarity of these lesions to the cerebrovascular lesions in human embryos with congenital rubella infection is noted. (6 refs.)-*Journal abstract.*

*National Institute of Neurological
Diseases and Blindness
Bethesda, Maryland 20014

1601 WAY, R. CLIFTON. Cardiovascular defects and the rubella syndrome. *Canadian Medical Association Journal*, 97(22): 1329-1334, 1967.

A review of the literature on cardiovascular defects following maternal rubella and a survey of data from 59 patients with congenital rubella syndrome seen at the University of Oregon Medical School demonstrate that the incidence of cardiac defects in infants with congenital rubella is close to 60 percent and that the pathogenesis is related to damage of the vascular endothelium. The literature before 1964 reflects an unsuccessful attempt to estimate the risk of cardiovascular damage from maternal rubella. The 1964 rubella epidemic in the United States brought new information into the field, but this data related to new forms of cardiovascular damage rather than to the incidence of cardiac defects. Twenty-four of the 59 infants with congenital rubella syndrome studied at Oregon had cardiac abnormalities. Fourteen had a patent ductus arteriosus, and 8 had a ventricular septal defect. Two cases had endocarditis, which previously had not been reported in association with congenital rubella. Infection of the endocardial tissue by rubella virus may have caused the heart valve damage, but no cultures were attempted to confirm this. Since the 1964 epidemic several reports have shown a 59 percent incidence of cardiac abnormalities among infants with congenital rubella. The most frequent lesion was patent ductus arteriosus (32 percent), but lesions of pulmonary and systemic arteries also were frequent. More detailed reports about cardiovascular defects are needed before definite conclusions can be made. (38 refs.) - *R. Froelich.*

The Dr. Charles A. Janeway
Child Health Centre
Pleasantville
St. John's, Newfoundland

1602 PURVIS-SMITH, S. G., & MENSER, MARGARET A. Dermatoglyphics in adults with congenital rubella. *Lancet*, 2(7560): 141-143, 1968.

Dermatoglyphic abnormalities have been demonstrated in children born in the 1960s with congenital rubella. The dermatoglyphic patterns of adult rubella patients born after the 1940 epidemic have been compared with 100 normal controls of similar age and racial background. There was a significantly increased incidence of digital whorl patterns in rubella-affected adults. No increase was found in the incidence of simian lines. A previously undescribed, atypical palmar crease (the "Sydney line") was demonstrated more frequently in female patients. Since dermatoglyphic defects occurred in

congenital rubella before 1960, it is unlikely that this effect can be used to support the hypothesis of recent viral mutation. Clinically, dermatoglyphics aid the diagnosis of congenital rubella where a typical defect is associated with a high incidence of digital whorl patterns. (7 refs.) *Journal abstract.*

P. O. Box 34
Camperdown, New South Wales 2050
Australia

1603 DELAHUNT, C. S., & RIESER, N. Rubella-induced embryopathies in monkeys. *American Journal of Obstetrics and Gynecology*, 99(4):580-588, 1967.

Rubella virus injected into 14 pregnant monkeys when the embryos were 20 to 44 days old resulted in a maternal host response to the virus and induced otic, cutaneous, lenticular, chorion, and osseous fetal lesions as well as a reduction of fetal size and 9 abortions with loss of the conceptus. A preliminary study with 8 monkeys injected with rubella virus demonstrated a rubella-neutralizing antibody response in 7. They did not have a significant clinical disease, but many did show a white blood cell reaction. The second study used Macaca mulatta monkeys that were inoculated by intravenous, intramuscular, or intranasal routes or by topical application to the eyes. Because of the high rate of abortions, cesarean sections were done on all monkeys past the 50-day gestation period. Neutralizing antibody titers increased in all 14 monkeys. The 5 viable fetuses recovered had crown-rump lengths much less than normal. Two of 3 fetuses examined by light microscope showed lenticular changes. These fetuses were infected during the sensitive period of ocular development. An electron micrograph showed a virus-like substance in proximity to the vitreous humor. Rubella virus was also isolated from fetal spleen, liver, brain, amniotic fluid, and placenta. Histological abnormalities of the ears, bones, and chorion were found in 2 fetuses. (23 refs.) - *R. Froelich.*

Department of Pharmacology
Charles Pfizer and Company
Groton, Connecticut

1604 DANDOY, SUZANNE. Measles epidemiology and vaccine use in Los Angeles County, 1963 and 1966. *Public Health Report*, 82(8): 659-666, 1967.

Comparison of the epidemiologic characteristics of the cases of measles reported in Los Angeles County (California) during the first 26 weeks of 1963 and the first 26 weeks of 1966 showed a rapid decline in the epidemic curve and an increase in the mean age of patients. This apparently was caused by a mass immunization campaign in April 1966. Two factors determined the selection of the particular time-span studied: the first 26 weeks represented the peak season of measles in Los Angeles, and 1963 was the last year in which the population was not protected by vaccine. There were 4,685 reported cases in 1963 and 5,427 reported cases in 1966. In 1963 the peak in reported cases occurred in the twentieth week and in 1966 in the seventeenth week. The rates of reported cases decreased in the middle and upper socioeconomic areas and increased in the large lower socioeconomic groups. Higher socioeconomic groups reported more cases in males, while lower socioeconomic groups reported more cases in females. In 1966 the percentage of cases in Negroes and persons with Spanish surnames was higher than in other groups. Although the mean age of reported cases increased in 1966, the number of cases below the age of 1 year increased. The unequal distribution of measles in Los Angeles probably is the result of unequal distribution of vaccine. If measles is to be controlled, immunization will have to be available to all segments of the population. (5 refs.) - *R. Froelich.*

School of Medicine and School
of Public Health
University of California
Los Angeles, California

1605 RIBEIRO, V. MOURA, & RIBEIRO, R. MOURA. Evolutive aspects in the EEGs of patients with measles and no neurological signs. *Developmental Medicine and Child Neurology*, 10(2):175-179, 1968.

Thirty-four children with measles and no signs of nervous system involvement had a serial EEG examination. Slow activity and sharp waves were the most prominent features

during the rash while a reduction of slow waves with increasing epileptic activity became more evident after the thirtieth day. These results make it clear that there is cerebral involvement in the acute stage of measles. (11 refs.) - *Journal summary.*

Department of Neurology
University of São Paulo
São Paulo, Brazil

1606 LEWIS, M. J. Transferable drug resistance and other transferable agents in strains of Escherichia coli from two human populations. *Lancet*, 1(7557): 1389-1393, 1968.

Two hundred and thirty-two strains of *Escherichia coli* isolated from 77 subnormal children in a mental hospital during an outbreak of *Shigella flexneri* infection, and 300 strains of *E. coli* from a more normal population, were examined for resistance to antibacterial drugs, for colicinogeny, and for the carriage of transfer factors. Seventy-eight (33.8 percent) of the strains from the hospital community were resistant to 1 or more antibacterial agents, and, of these strains, 49 could transfer their resistance to *E. coli* K12 or *Salmonella typhimurium* in mixed culture. Seventy-two (24 percent) of the 300 strains from the general population were also drug-resistant, and 31 of these carried transferable resistance. In both populations, approximately 3 percent of the strains carried transfer factors not associated with drug-resistance or colicinogeny. (18 refs.) - *Journal abstract.*

Sherwood Hospital
Nottingham, England

1607 ALFORD, CHARLES A. Congenital rubella: A model for chronic *in utero* infections in man. In: International seminar on medical genetics, August 31-September 3, 1966. *Alabama Journal of Medical Sciences*, 3(4):463-466, 1966.

Virologic and serologic studies were performed on the products of conception of 68 women whose pregnancies were terminated voluntarily because of rubella during the first trimester. Virus was recovered in 46 percent (47 percent of placental tissue and 26 percent of fetal tissue) with maximal recovery (73 percent) when the maternal infection occurred during the fifth or sixth weeks of pregnancy. Of 26 infants born to mothers with first trimester rubella, 21 appeared to be clinically affected and 9 had recoverable virus. Rubella neutralizing antibody was found in all fetal sera, in most affected children's sera up to age 5, and in most control sera for the first 6 months of life. All had maternal gamma-G-globulin, but individuals infected *in utero* produced gamma-M and gamma-A globulins detectable by simple immunoelectrophoretic methods. Immunoglobulin screening of cord sera may prove useful in the detection of congenital infections. (5 refs.) - *E. L. Rowan.*

University of Alabama
Medical Center
Birmingham, Alabama 35233

1608 LOPEZ, ESPERANZA, & *ATERMAN, KURT. Intra-uterine infection by "Candida." *American Journal of Diseases of Children*, 115(6):663-670, 1968.

The eighth reported case of *Candida* (Monilia, Thrush) infection *in utero* occurred in an infant who expired after 13 hours of respiratory distress. Although hyphae and spores were demonstrated on the surface of the umbilical cord, necrotic areas of candidal granuloma (characteristic yellow-white spots) rarely contained organisms. Diffuse chorioamnionitis was present without demonstrable organisms. The infant showed intracranial hemorrhage (cause of death) and neonatal pneumonia without organisms in the lung, but hyphae and spores were demonstrated in the meconium in the intestines without penetration of the mucous membranes. Comparison with other cases shows concurrent vaginal infection, no apparent rupture of membranes, cord infection, and chorioamnionitis (with or without organisms). Multiple reporting by those seeking lesions suggests that this entity is more common than was previously appreciated. (20 refs.) - *E. L. Rowan.*

*Children's Hospital
Halifax, Nova Scotia
Canada

1609 PEARSON, HAROLD E., & ANDERSON, GAIL V. Perinatal deaths associated with bacteroides infections. *Obstetrics and Gynecology*, 30(4):486-492, 1967.

Seventy percent of the cases of bacteroides bacteremia encountered over a 2-year period at a general hospital were associated with pregnancy; the outcome for these cases was 34 incomplete septic abortions, 6 parturient infections, and 13 fatal newborn bacteremias. A total of 29,000 blood cultures was obtained, and 96 (0.3 percent) yielded bacteroides. Review of 76 Ss with bacteroides bacteremia showed that 13 had abdominal operations or trauma, 10 had various other conditions, 40 were pregnant women, and 13 were neonates. The 6 women with parturient infections delivered 7 infants, of which only 1 survived (a twin). All infants (13) with bacteremia died. All 6 women were multiparas and 5 had prematurely ruptured membranes. Two had urinary tract infections, 2 had amnionitis, 1 had cervicitis, 5 were anemic, and 3 were in shock. Findings at autopsy for the infants included cerebral hemorrhage in 2 and pulmonary pathology in 2. All the women received antibiotic treatment including penicillin, chloramphenicol, and streptomycin; they obtained clinical cure within 2 days (except for 1 who became afebrile on the eleventh day). Bacteroides bacteremia in women often means genital infection of pregnancy which is not serious for the mother, but frequently fatal for the infant. The source of intrauterine infection is suspected to be nonsterile instrumental trauma as in induced abortions or extension from foci of infection such as adnexa, periurethral, perirectal, or Bartholin gland infections. (12 refs.) *R. Froelich.*

Los Angeles County
General Hospital
1200 North State Street
Los Angeles, California 90033

1610 DIOSI, P., BABUSCEAC, LIVIA, NEVINGLOVSCHI, OLIMPIA, & KUN-STOICU, G. Cytomegalovirus infection associated with pregnancy. *Lancet*, 2(7525):1063-1066, 1967.

The endometrium and mammary glands are possible sites of virus multiplication during pregnancy and may facilitate infection of the fetus or infant. This conclusion was reached after cytological and virological examination of milk from 57 women in puerperium and cervical secretions from 50 gynecological out-patients revealed recoverable cytomegalovirus in 1 sample each of milk and uterine discharge and inclusion-bearing enlarged cells in 1 specimen of cervical secretion. The 50 gynecological patients (CA, 18-44 yr) selected at random were undergoing treatment after abortion or delivery. The 57 women in the puerperium were in-patients of apparently good health. Of 63 cervical secretion specimens and 58 milk samples taken, 9 became contaminated with bacteria or yeast. The 3 women with positive results for cytomegalovirus were a 27-year-old woman with endometritis 3 weeks after embryonic abortion; a 34-year-old woman who had delivered a normal, full-term baby 3 days before; and a 42-year-old woman who had lower abdominal cramps and intermittent vaginal bleeding 2 months after delivery of a healthy baby. These findings provide further evidence that cytomegalovirus infection can be present in the reproductive female before and after delivery; in some cases it may produce no symptoms, while in others it may cause severe inflammation leading to abortion. Cytomegalovirus inclusions in the salivary glands of infants could be related to the possible presence of virus in breast milk, especially since the inclusions reach peak incidence during the breast-feeding period. Cytomegalovirus in the endometrium may lead to abortion. (39 refs.) - *R. Froelich.*

Department of Epidemiology
Institute of Hygiene
Timişoara Bd.
Babeş 16, Rumania

1611 ROBERTSON, J. S. Toxoplasmin sensitivity: Subnormality and environment. *Journal of Hygiene*, 64(4):405-410, 1966.

The higher incidence of positive toxoplasmin skin tests found among institutionalized and out-patient MRs than among normal children living in children's homes may be the result of personal habits which expose the MR children to an increased risk of infection. The 233 hospitalized MRs who were tested had a 9.9 percent incidence of sensitivity. The incidence by age groups was 11.3 percent for those 1-9 years old, 7.9 percent for Ss 10-17 years of age, and 14.6 percent for those 18-19 years old. Among the 120 MRs from a training center who were tested, there was an incidence of 10.0 percent positives. The incidence by age groups was 2.0 percent for those 1-9 years old, 20.4 percent for those 10-17 years old, and 0.0 percent for Ss 18-19 years old. Examination of the overall data showed a significantly higher incidence

for children between 10 and 17 years of age. When 71 children of normal intelligence residing in children's homes were tested, only 1 had a positive skin test (1.4 percent). Since the factors underlying admission to an MR institution or to a children's home are similar, these factors apparently do not affect the incidence of toxoplasma infection. One hundred and fifteen mongoloids under the age of 50 years had an incidence of 11 percent positive skin tests irrespective of age, while the incidence was 5 percent among 709 non-mongoloid MRs under 10 years old and 30 percent in those over 30 years old. It appears that most toxoplasma infections in MR children occur postnatally. (16 refs.) - *R. Froelich.*

50 Holydyke
Barton-on-Humber
England

1612 Coxsackie B5 virus infections during 1965. *British Medical Journal*, 4(5579):575-577, 1967.

Reports made during the summer of 1965 to the Director of the Public Health Laboratory Service by several laboratories throughout the United Kingdom showed a widespread outbreak of Coxsackie B5 virus infections, with affected patients demonstrating respiratory symptoms, meningitis, gastrointestinal symptoms, and myalgia. A review of the number of Coxsackie B5 infections reported yearly for the past 5 years demonstrates the dimensions of this outbreak: 467 cases were reported in 1960, 46 in 1961, 10 in 1962, 26 in 1963, 104 in 1964, and 1,160 in 1965. A special report was received on 900 of the 1,160 isolations. There were 475 males and 421 females (in 4 cases, sex was not specified), with 41 percent under 9 years of age and 19 percent between 10 and 19 years of age. Most infections occurred between May and November. Thirty-one percent had central nervous system (CNS) involvement such as meningitis or encephalitis, with CNS involvement occurring most frequently in those over 10 years of age. A common feature of the infection in children under 10 years of age was involvement of the respiratory and gastrointestinal systems. Other systems occasionally involved were the heart, skin, joints, and liver. The epidemic did not appear to be confined to any 1 area. The absence of symptoms reported in 4.6 percent of the cases again indicates that excretion of Coxsackie B5 virus need not be associated with disease. (8 refs.) - *R. Froelich.*

1613 HOBBS, J. R., MILNER, R. D. G., & WATT, P. J. Gamma-M deficiency predisposing to meningococcal septicaemia. *British Medical Journal*, 4(5579):583-586, 1967.

Of the 9 patients with meningococcal infection who were studied for serum immunoglobulin levels and meningococcal antibodies, the 2 with fatal fulminating meningococcal septicemia were found to have severe gamma-M globulin deficiency. Immunoglobin was measured by a modified Mancini method, while meningococcal antibodies were measured by the indirect fluorescence method. Four of the 9 patients served as positive controls, and the serum for these 4 was obtained from another laboratory. The gamma-M serum levels in the 2 fatal cases were subnormal at the start of the illness. The gamma-M levels were also low in 3 other patients, but this was because the patients were less than 2 months of age. Gamma-G and gamma-M meningococcal antibodies appeared in the convalescence serum of the survivors, and a complement-fixation test was positive in 5 cases. The families of the 2 children who died were also studied for immunoglobulin levels. A total of 6 relatives had a low gamma-M level, and in 2 of these the levels were more than 2 standard deviations below the normal range. Testing of pooled serum from 10 mothers and pooled cord serum from their babies showed a higher bactericidal activity for the maternal serum that was only slightly decreased by destruction of complement. The bactericidal and humoral defense mechanisms against CNS infection by meningococcus appears to be related to gamma-M globulin. The deficiency of gamma-M in 2 cases appeared to be inherited. (19 refs.) - *R. Froelich.*

Royal Postgraduate Medical School
and Institute of Child Health
Hammersmith Hospital
London W. 12, England

1614 MORGANTE, O., BARAGER, E. M., & HERBERT, F. A. Central nervous system disease in humans due to simultaneous epidemics of echovirus type 9 and western encephalomyelitis virus infection in Alberta. *Canadian Medical Association Journal*, 98(25):1170-1175, 1968.

During late summer of 1963 a large number of cases of acute central nervous system disease were reported in Alberta. Concurrently an epizootic of western encephalomyelitis

(WE) infection was detected among horses. Six cases in humans were proved to be due to this viral agent. Surprisingly, investigation revealed a large simultaneous epidemic of echovirus 9 infection. The latter was not detected again in 1964 or 1965. The endemic nature of WE in this province was confirmed by its recurrence in horses during those years as well as in humans in 1965. (3 refs.) - *Journal summary.*

Provincial Laboratory of Public Health
The University of Alberta
Edmonton, Alberta, Canada

1615 MILLER, DAVID G., GABRIELSON, MARY O., BART, KENNETH J., OPTON, EDWARD M., & HORSTMANN, DOROTHY M. An epidemic of aseptic meningitis, primarily among infants, caused by echovirus 11-prime. *Pediatrics*, 41(1):77-90, 1968.

An outbreak of aseptic meningitis particularly involving infants below 6 months of age, was caused by echovirus 11-prime, an agent not previously associated with epidemic meningitis. During the summer of 1965 in New Haven, Connecticut, a total of 54 patients had disease syndromes associated with the virus. Of 17 patients with aseptic meningitis, 11 were under 6 months of age and 7 were under 3 months of age. Except for one 16-year-old boy, the neurologic disease was not severe. Pneumonia occurred in 3 patients, and otitis media was present in 6. A large number of patients had minor illnesses not requiring hospitalization. Gastrointestinal symptoms were present in 28, and a rash was seen in 7 patients. A serologic survey showed that the virus had not been active previous to the epidemic except in some areas in the community. Seven months after the epidemic over 1/2 the children in the crowded central city had antibody to the epidemic strain, but titers were relatively low.There was a distant serologic relationship between the epidemic virus and the prototype echovirus 11 (Gregory). Hyperimmune monkey sera prepared against the epidemic virus had a neutralizing titer of $\geq$1:1024 against the epidemic strain but only 1:8 against the prototype Gregory strain. The echo-11 prime virus grew well in continuous line HEp-2 cells. (37 refs.) - *R. Froelich.*

Department of Epidemiology and Public Health
Yale University School of Medicine
New Haven, Connecticut 06510

1616 PARRY, WILFRID H. Meningococcal meningitis. *Nursing Mirror*, 126(3): 24-25, 1968.

The epidemiology, symptoms, complications, and treatment of meningococcal meningitis are presented. Of the approximately 500 cases which occur annually in England and Wales, 2/3 are males and 60 percent are children under 5. Meningococci are transmitted by droplets and may be carried in the nasopharynx by 70 to 85 percent of the population during epidemics and by 2 to 5 percent at other times. Incubation takes 2 to 10 days. Onset is sudden and is characterized by headache, fever, vomiting, nuchal rigidity, often with convulsions, opisthotonos, and photophobia. Rash occurs in 25 to 50 percent, and Kernig's sign may be present also. Hospitalization is mandatory, and treatment includes penicillin and/or sulfa in high doses. Complications include deafness, hydrocephalus, blindness, hemiplegia, and cranial nerve paralysis; death occurs in 1/4 of the cases. Preventive measures include isolation of cases and prophylactic use of sulfonamides. (No refs.) - *D. Martin.*

No Address

1617 HAMILTON, EUGENE G. Prevention of Rh-isoimmunization by injection of anti-D antibody. *Obstetrics and Gynecology*, 30(6):812-815, 1967.

The value of passive immunization for the prevention of Rh-sensitization was suggested in a controlled study of 500 mothers. Plasma was obtained from Rh-negative women who were severely sensitized. The recipients were Rh negative (dce/dce) women who had delivered Rh-positive ABO-compatible babies. The plasma was given intravenously and intramuscularly, usually within 38 hours of delivery. Of 500 passively immunized women, 74 were observed through the delivery of a subsequent Rh-positive infant. None of the 74 developed observable antibodies in their next pregnancy, and 4 women who were in their third or fourth treated pregnancy returned without evidence of sensitization. Moreover, a total of 79 infants were born without sensitization. In a control group of 88 Rh-negative women who gave birth to a subsequent Rh-positive infant, 16 became sensitized. The majority of the sensitizations occurred in the lower pariety groups. The expected number of sensitizations among the treated group would have been 7 (1 out of 10). These findings seem to indicate that prevention of Rh isoimmunization in pregnant

women is possible. The commercial preparation of anti-Rh globulin is currently underway, but the preparation procedure is simple and economical and could be done in a hospital with adequate blood-banking facilities. (8 refs.) - *R. Froelich.*

St. Mary's Hospital
6420 Clayton Road
St. Louis, Missouri 63117

1618 MURRAY, SHEILAGH. Prevention of Rh-haemolytic disease. *British Medical Journal*, 4(5580):682, 1967. (Letter)

Enhancement of immunization by IgM and suppression with gamma-globulin have not been satisfactorily explained. Comparison of anti-D gamma-globulin in parturient normal women with gamma-globulin given to pregnant women may not be valid. Differing Gm factors in different ethnic groups could relate to bleeding donors as a source of anti-D gamma-globulin. (6 refs.) - *J. Snodgrass.*

National Blood Transfusion Service
Newcastle upon Tyne, England

1619 Prevention of rhesus haemolytic disease. *British Medical Journal*, 4(5570):3-4, 1967.

Women at risk can be protected against Rh immunization and their children safeguarded against rhesus hemolytic disease by administering 5 ml of gamma-globulin containing incomplete anti-D within 48 hours of delivery. It is estimated that 15 hyperimmunized donors giving 500 ml of plasma monthly could supply sufficient anti-D gamma-globulin for the projected needs/1 million of the general population. (3 refs.) - *J. Snodgrass.*

1620 HOBBS, J. R., HUGHES, M. I., & WALKER, W. Immunoglobulin levels in infants after intrauterine transfusion. *Lancet*, 1(7557):1400-1402, 1968.

After intrauterine transfusions, most newborn babies had raised serum-levels of gamma-A and gamma-M globulins. One year later most had subnormal gamma-A and gamma-M levels compared to those found in control babies matched for prematurity and severity of hemolytic disease of the newborn. The most likely explanation is that the fetus was stimulated antigenically by the donor blood; but the possibility of transfer of globulins or the inadvertent inclusion of viable lymphocytes in the donor plasma (either of which might lead to delayed emergence of the infant's own immunoglobulins) cannot be ruled out. (9 refs.) *Journal abstract.*

Royal Postgraduate Medical School
London W. 12, England

1621 MASERA, G., & MARINI, A. Intrauterine transfusion in Rh-isoimmunization. *British Medical Journal*, 4(5580):682-683, 1967. (Letter)

In addition to the depression of bone marrow in Rh-immunized infants subsequent to intrauterine transfusion prolonged anemia may occur, perhaps as the result of persisting antibodies in the blood. (No refs.) - *J. Snodgrass.*

University of Milan
Milan, Italy

1622 HOLMES, GRACE E., MILLER, JUNE B., & SMITH, ELBERT E. Neonatal bilirubinemia in production of long-term neurological deficits. *American Journal of Diseases of Children*, 116(1):37-43, 1968.

Long-term follow-up studies were done on 63 children who had unconjugated serum bilirubin levels ranging from 5.5 to 23.4 mg/100 cc during the early neonatal period without other complications. Seventeen normal children without clinically recognized neonatal bilirubinemia made up the control group. Evidence of neurological deficits was sought using a refined physical examination looking for motor incoordination, pure-tone audiometric testing to detect hearing loss, and a modified Oseretsky test for measuring motor proficiency. Physical examinations revealed no neurological abnormalities. None of the children demonstrated evidence of perceptive hearing loss. The results of the objective Oseretsky test of motor proficiency revealed no adverse relationship between degree of bilirubinemia and subsequent rate of motor maturation. In this study normal full-term infants with mild to

326-079 O - 68 - 3

moderate hyperbilirubinemia were found to have no subsequent hearing or motor impairment. (17 refs.) - *Journal abstract.*

Birth Defects Center
University of Kansas
Medical Center
Kansas City, Kansas 66103

1623 MAURER, HAROLD M., WOLFF, JAMES A., POPPERS, PAUL J., KUNTZMAN, R., FINSTER, M., PANTUCK, E., & CONNEY, A. H. Reduction in concentration of total serum-bilirubin in offspring of women treated with phenobarbitone during pregnancy. *Lancet*, 2(7560):122-124, 1968.

Twelve pregnant women were treated with phenobarbitone (30-120 mg/day) for 2 weeks or longer prior to delivery. Subsequently, concentrations of serum-bilirubin in their offspring and in 16 control babies were compared during the first 4 days of life. Premature babies and those sensitized by maternal-fetal Rh or ABO incompatibility were excluded. Serum-bilirubin levels were significantly lower in babies of treated mothers, and maximum serum-bilirubin levels occurred earlier in this group. The data suggest that phenobarbitone received during pregnancy decreased the concentration of neonatal serum-bilirubin, possibly by enhancing hepatic enzyme activity in the fetus and newborn infant. (17 refs.) - *Journal abstract.*

Department of Pediatrics
Medical College of Virginia
Richmond, Virginia 23219

1624 GLASGOW, JOHN F. T., & FERRIS, J. A. J. Encephalopathy and visceral fatty infiltration of probable toxic aetiology. *Lancet*, 1(7540):451-453, 1968.

A child who died after a 3-day illness was found to have acute encephalopathy and visceral fatty infiltration. Evidence obtained suggested that the patient's illness and death were caused by poisoning with a commercial paint-thinner. (15 refs.) - *Journal abstract.*

Nuffield Dept. of Child
Health
Institute of Clinical Science
Grosvenor Road
Belfast, Ireland

1625 Drug taps fluid threatening fetus. *Medical World News*, 8(39):56, 1967.

Promethazine administered in the last trimester is being used to relieve the edema and inflammation of the fetus in fetal hydrops. Of 13 cases of severe hemolytic anemia, 11 survived, 1 died of advanced hydrops before treatment was established, and 1 died of hemolytic anemia. There is some question as to whether the treated fetuses had indeed developed hydrops. (No refs.)
J. Snodgrass.

1626 MELCHIOR, J. C., SVENSMARK, O., & TROLLE, D. Placental transfer of phenobarbitone in epileptic women, and elimination in newborns. *Lancet*, 2(521):860-861, 1967.

In 32 epileptic pregnant women studied for placental transfer of phenobarbitone, the phenobarbitone concentration of umbilical cord serum was 95 percent of that in the maternal serum. In the newborn infants, the rate of drug elimination was equal to or slower than it was in their mothers. Venous blood from the umbilical cord and from the mother was obtained 5 minutes after parturition. All mothers had been treated with oral phenobarbitone or primidone for some months. The concentration of phenobarbitone in the umbilical cord serum was 95 percent of that in the maternal serum, whether this was derived from phenobarbitone or from primidone. Samples of infant blood were tested between 24 and 100 hours after birth. The rate of elimination varied from 1 to 20 percent for the first 24 hours. Four full-term infants had a 10 to 20 percent rate of elimination, which is in the adult range. Four infants had respiratory difficulties, but none had unusually high levels of phenobarbitone (below 6 mg/litre). Two infants had a congenital malformation, and 1 was premature with neonatal jaundice. (15 refs.)
R. Froelich.

Rigshospitalet
University of Copenhagen
Copenhagen, Denmark

1627 ROSEN, MORTIMER G. Fetal electroencephalographic studies of the placental transfer of thiopental and ether. *Obstetrics and Gynecology*, 30(4):560-567, 1967.

The fetal brain-wave patterns of guinea pigs roughly correlated with the maternal

electroencephalogram (EEG) when thiopental or ether was administered to the mothers. This again documents the transfer of these compounds across the guinea pig placenta. Fetal electrodes were inserted through the uterus into the parietal intracortical location. Electrodes were placed in the parietal area of the mother 24 hours prior to the day of the study. Thiopental was given intravenously to 12 pregnant animals. The initial maternal EEG response was an increase in voltage and fast activity progressing to theta wave activity and then returning to normal. The fetal EEG changed at an average of 53 seconds after maternal injection with alterations similar to the maternal response. In 2 instances the fetal response occurred before the maternal response. Ether given by inhalation produced maternal EEG changes in 29 seconds. These changes included an increase in wave frequencies followed by slow wave patterns of higher voltage. Too vigorous ether induction caused a fetal heart rate depression. Fetal EEG changes followed maternal changes by an average of 14 seconds and consisted of increased wave frequency followed by slowing and then by voltage depression. The slowing and the voltage depression were more evident in smaller fetuses. (16 refs.) *R. Froelich.*

University of Rochester School
of Medicine and Dentistry
Rochester, New York 14620

1628 DUFFUS, GILLIAN M., & MacGILLIVRAY, IAN. The incidence of pre-eclamptic toxaemia in smokers and non-smokers. *Lancet*, 1(7550):994-995, 1968.

The incidence of albuminuric pre-eclamptic toxemia is lower in women who smoke cigarettes than in non-smokers. The difference is significant at the 1 percent level and is independent of social class, weight at 20 weeks gestation, and weight gain between 20 weeks and 30 weeks gestation. The risk to the baby of the non-smoking toxemic woman is less in terms of low birth-weight and perinatal mortality than to the babies of toxemic women who smoke. (14 refs.) *Journal abstract.*

No address

1629 BARLTROP, D., & KILLALA, N. J. P. Faecal excretion of lead by children. *Lancet*, 2(7524):1017-1019, 1967.

In conjunction with data from preliminary animal studies, comparison of fecal lead in 3 cases of lead poisoning with that found in other groups of children showed that fecal lead determinations are a sensitive index of ingested lead and have a place in population screening and clinical use. Ss (CA, 25-35 mo) were divided into 4 groups: consecutive hospital in-patients with illnesses other than lead poisoning (N=6); healthy children attending a clinic (N=8); children with a history of pica, who were also attending a clinic (N=11); and hospital in-patients admitted for treatment of lead poisoning (N=3). Feces was analysed by a semiautomated alkaline dithizone method. The 3 Ss with lead poisoning demonstrated neurological changes such as irritability and restlessness, and there was X-ray evidence of lead in bones or gut. Each had pica, and each had elevated blood levels of lead (84.8, 68.3, and 92.0 μg/100 g). The fecal lead was elevated above .4 μg/specimen for the 3 children in group 4 and for 1 in group 3. Serial specimens showed that normal values of fecal lead occurred within 6 days of hospitalization. The mean fecal lead of children in groups 2 and 3 was 123 μg/stool. Dogs given a known oral dose of lead showed that the fecal lead content reached 91.4 percent of the administered dose within 8 days and that the fecal lead was more sensitive to minor changes of ingested lead than either the blood or urine lead concentrations. (10 refs.) - *R. Froelich.*

Pediatric Unit
St. Mary's Hospital Medical
School
London W. 2, England

1630 GORDON, N. S., KING, E., & MACKAY, R. I. Lead absorption in children. *British Medical Journal*, 3(5565):615-616, 1967.

Previous reports have failed to demonstrate that MR children are at greater risk from lead intoxication than normal children. MR

children with pica are, however, clearly more liable to lead poisoning. (2 refs.) *J. Snodgrass.*

Royal Manchester Children's Hospital
Pendlebury, Nr. Manchester
England

1631 CRAWFORD, M. D., & MORRIS, J. N. Lead in drinking water. *Lancet,* 2(7525):1087-1088, 1967. (Letter)

Studies on the relationship between cardiovascular mortality and the softness of drinking water in Britain revealed no indication of an excess of any likely metal contaminant. Plumbosolvency, however, was still found to be a problem with water which had remained in the pipes overnight. In well over 1/2 the country boroughs studied, lead quantities in excess of recommended limits were found in both soft and hard waters. (4 refs.) - *J. Snodgrass.*

London School of Hygiene and Tropical Medicine
London W. C. 1, England

Trauma or Physical Agent

1632 WOOD, JAMES W., JOHNSON, KENNETH G., OMORI, YOSHIAKI, KAWAMOTO, SADAHISA, & KEEHN, ROBERT J. Mental retardation in children exposed in utero to the atomic bombs in Hiroshima and Nagasaki. *American Journal of Public Health,* 57(8):1381-1389, 1967.

Incidence of MR was increased among 17-year-old Ss who were exposed in utero to the atomic bombs in Hiroshima and Nagasaki, particularly in those at 6-15 weeks gestation who were within 1,500 meters from the hypocenter. The overall sample consisted of 1,613 children who were at all stages of gestation at the time of the blast. These Ss have been examined annually at the Atomic Bomb Casualty Commission (ABCC). Psychometrics included the Koga, Goodenough, and Tanaka B tests. MR was diagnosed only if it was grossly evident. A total of 30 MR Ss were found in the entire sample, and of the 1,259 children examined when 17 years of age, 16 were MR. The prevalence was 1.7 percent in the Hiroshima sample and 2.3 percent in the Nagasaki group. The prevalence of MR was 5 times as high among those within 1,500 meters of the hypocenter as it was for the more distal Ss. An attempt was made to find etiological factors other than radiation for the MR, and 9 cases with different etiology were determined. Despite this, the pattern of differences between the groups did not change. All but 2 of the MRs, particularly those who had been within 1,500 meters of the hypocenter, had smaller than average heads. The pattern of differences was the same for the children examined before 17 years of age. It seems most likely that the etiological explanation for these findings is proximal irradiation to the fetus. (17 refs.) - *R. Froelich.*

Yale University School of Medicine
333 Cedar Avenue
New Haven, Connecticut

1633 WOOD, JAMES W., KEEHN, ROBERT J., KAWAMOTO, SADAHISA, & JOHNSON, KENNETH G. The growth and development of children exposed in utero to the atomic bombs in Hiroshima and Nagasaki. *American Journal of Public Health,* 57(8):1374-1380, 1967.

Head circumference, height, and weight were below normal in a group of 17-year-old Ss who were exposed in utero to the atomic bombs in Hiroshima and Nagasaki. The purpose of the study was to evaluate growth attainment at the 17-year level for the 1,259 Ss who have been followed yearly since the atomic blast. The original sample consisted of 1,613 children classified according to distance from the hypocenter and divided into 3 groups: the 0-1,999 meter group, the 3,000-4,999 meter group, and the not-in-city group. The 2 distal groups were matched for gestational age and sex to the proximal group. Except for Nagasaki females, the mean head circumferences were smaller for those within 2,000 meters, and the differences, except for Nagasaki males, were significant ($p \leq 0.01$). Mean standing height and weight were less for all within 2,000 meters except for Nagasaki females. Nagasaki females within 2,000 meters had smaller mean intercristic diameters. Those within 2,000

meters were divided into a high dose category (<1,500 m, 50+ rad, positive radiation syndrome) and a low dose category (1,500-1,999 m, <50 rad, no radiation syndrome). The major effects occurred in those who were within 1,500 meters from the hypocenter. The effects did not vary according to the trimester of gestation. This study indicates that exposure of the human fetus to irradiation results in limitation of head and body size. (15 refs.) - *R. Froelich.*

Yale University School of Medicine
333 Cedar Avenue
New Haven, Connecticut

1634 MINDE, K., WEBB, G., & SYKES, D. Studies on the hyperactive child VI: Prenatal and paranatal factors associated with hyperactivity. *Developmental Medicine and Child Neurology*, 10(3):355-363, 1968.

In this study the birth records of 56 hyperactive children were compared with 56 controls with respect to 23 different prenatal and paranatal complications. The only significant difference was that more hyperactive than normal children were born following an abnormally short or long labor which was further complicated by the use of forceps. There was no evidence, however, that the mothers of hyperactive children either suffered from or were more predisposed to have difficulties producing brain-damage in their offspring than were the mothers of normal children. There is evidence that important information regarding the child's birth process is commonly withheld from the mother by her medical attendants. The hypothesis that chronic hyperactivity is frequently the result of complications of pregnancy and delivery receives little support from this study. (19 refs.) - *Journal summary.*

Department of Child Psychiatry
McGill University
Montreal 25, Quebec
Canada

1635 TERPLAN, K. L. Histopathologic brain changes in 1152 cases of the perinatal and early infancy period. *Biologia Neonatorum*, 11(5/6):348-366, 1967.

The CNS of 1,152 newborns and infants (including 820 cases of respiratory distress syndrome, 65 erythroblastosis and 199 congenital heart disease) among 66 stillborns, 49 immatures below 1,000 gm, 476 prematures and 345 fullterms up to 14 days, and 48 prematures and 168 fullterms from 15 days to 3 months of age, was systematically studied on large celloidin sections. Histopathologic findings in the premature and fullterm show significantly more frequent neuronal hypoxic changes in the cerebral cortex of the fullterm as compared to the premature, and a greater incidence of intraventricular and parenchymatous hemorrhages, and necrosis in the periventricular white matter, of the premature. There is a frequent lack in correlation between clinical symptoms of neurologic disorders and histopathologic findings in the brain. (40 refs.) - *Journal summary.*

219 Bryant Street
Buffalo, New York 14222

1636 SPILLMANN, RUPERT. Psychisches Hirnschaden-Syndrom bei Kindern mit Asthma bronchiale. (Psychological brain damage syndrome in children with bronchial asthma.) *Acta Paedopsychiatrica*, 35(1): 18-31, 1968.

In bronchial asthma and in the other manifestations of asthma which are associated with breathing difficulties, one may presume that severe coughing fits lead to transient hypoxemia. Numerous cases are reported where death was due to suffocation. However, repeatedly attempts have been made to ascribe the genesis of this illness to a psychological cause, even if a definite allergy as a *conditio sine qua non* had been recognized. So far it has been accepted that asthma occurs in people whose psyche is abnormal. However, it has been proved that in extreme cases anoxia can through cerebral damage lead to death. Therefore it is asked whether at least part of the alterated psyche is due to brain damage caused by frequent hypoxias. In these cases mental changes would be secondary and organic. From a large group of allergic children, 12 pupils (CA, 7 yr 10 mo to 15 yr 3 mo) who had recently suffered from severe or moderately severe asthma were chosen. Ten of these children never had any psychiatric treatment. The other 2 had previously been psychiatrically examined, 1 on account of school difficulties, the other because of enuresis nocturna. By means of the anamnesis and the clinical-psychiatric examination, a series of clinical and psychiatric criteria was established which allowed for comparison of a child with the norm and with each other. Eleven out of 12 children showed symptoms which must be considered as secondary to organic brain

damage; however, some of these symptoms were present before the onset of the illness. Nevertheless, it is supposed that the asphyxia due to asthma has aggravated or even caused these symptoms. For practical purposes, these findings point out that it is essential to suppress attacks of asthma, as soon as epileptic fits, because every new attack may cause or aggravate damage of the brain and hence deteriorate the asthma conditioned mental disturbances. (29 refs.) *Edited journal summary.*

4511 Kammersrohr
Sonnenhof, Switzerland

1637 BAKER, LENOX D. Rehabilitation of the cerebral palsy patient. In: *A Symposium on the Child.* Askin, John A., Cooke, Robert E., & Haller, J. Alex, Jr., eds. Baltimore, Maryland, The John Hopkins Press, 1967, Chapter 10, p. 133-148.

Some rehabilitative surgical procedures which have been used either alone or in combination to help CPs walk as early as possible include the Grice subtalar arthrodesis, heel lengthening, facet osteotomy of the os calcis and insertion of supporting wedge grafts, rerouting of the tendon of the posterior tibial muscle anterior to the medial malleolus, rerouting of the tendons of the peroneus brevis and peroneus longus muscles anterior to the lateral malleolus, lengthening of the gastrocnemius aponeurosis, and transplantation of the semitendinosus tendon to the anterior aspect of the lateral femoral condyle. These operations restore muscle balance, aid in proper joint alignment, and help establish correct posture in the line of gravity. They are designed to bring about and maintain corrections and may be used with both CP children and with adult hemiplegics who have had cerebrovascular accidents. Although total rehabilitation is not a possibility for most CP children, orthopedic surgical procedures can be used to correct deformities and improve functioning. (9 refs.) - *J. K. Wyatt.*

1638 BEST, GARY A. Cerebral palsy--A taxonomy of related problems. *Cerebral Palsy Journal,* 28(6):8-10, 1967.

A taxonomical outline of cerebral palsy (CP) is presented to delineate the needs of the CP and indicate the facilities available for management of this handicap. A taxonomy is necessary to formulate thought and organize knowledge. Such a classification scheme should bring order without restricting imagination and should identify and clarify possible relationships. The 4 major dimensions of the taxonomical outline include: (1) the needs of the CP; (2) services to meet these needs; (3) agencies which can provide services to the CP; and (4) financial aid for these services and agencies. The outline has a total of 49 first-order subdivisions and 60 second-order subdivisions, many of which deal with education, counseling, and rehabilitation. No hierarchy is intended or implied in the order of presentation utilized in the taxonomy. The taxonomical outline may serve as a point of departure for further study and exploration. By matching factors of various dimensions, it can be used to visualize the range of problems that must be faced in the management of CP. (3 refs.) - *R. Froelich.*

University of Minnesota
Department of Special Education
Minneapolis, Minnesota 55400

1639 BROWN, RUSSELL V., & SHARMA, PREM S. Facial growth of cerebral palsy subjects, a roentgenographic cephalometric study. *Cerebral Palsy Journal,* 28(6):3-8, 1967.

A serial roentgenographic cephalometric study of 82 Ss with cerebral palsy (CP) demonstrated a retrognathic tendency among the younger age group (4-7 years) and suggested that extensive muscle therapy would have a beneficial effect on the growth of the face. The study was done over a 5-year period at the Kiwanis Children's Center of the Curative Workshop in Milwaukee, Wisconsin. A total of 182 CP Ss were studied clinically, and 82 received lateral roentgenographic cephalograms. The diagnoses of these 82 Ss were spastic (65), athetoid (12), ataxic (1), and unclassified (4). The values established by Riedel (1952) and Higley (1954) were used as the normal comparison. Age groups ranged from 4-12 years. The observed t ratio and probability level were determined for age groups and for both genders. While the 4-7-year age group had skeletal and dental patterns with a Class II or retrognathic tendency, the older age group (8-12 years) had patterns well within normal limits. The anterior-posterior skeletal dysplasia found in the 4-7-year group was thought to be related to the neuromuscular involvement that affected

these Ss. Not only can extensive muscle therapy improve speech and mastication, it can also improve the perioral environment to a sufficient degree to adjust the growth-potential of the face. (24 refs.) *R. Froelich.*

Marquette University School
of Dentistry
604 North 16th Street
Milwaukee, Wisconsin 53233

1640 SWALLOW, J. N. Dental disease in cerebral palsied children. *Developmental Medicine and Child Neurology*, 10(2): 180-189, 1968.

A dental survey of 298 cerebral palsied children attending day schools for the physically handicapped revealed that the prevalence of caries and gingival disease, and the standard of oral cleanliness were similar to that found in physically normal children. However, the cerebral palsied children had received much less restorative care. (18 refs.) - *Journal summary.*

Dental School
Welsh National School of Medicine
Heath, Cardiff, Wales
Great Britain

1641 FOLEY, JOHN. Deterioration in the EEG in children with cerebral palsy. *Developmental Medicine and Child Neurology*, 10(3):287-301, 1968.

Four hundred ninety-eight serial EEGs in 165 cases of cerebral palsy have been studied. The EEG in cerebral palsy is not static but shows a tendency to deterioration. While there is a positive correlation between the abnormal EEG and epilepsy, the relationship between deterioration in the EEG and the development of epilepsy is not statistically significant. The degree of abnormality of the EEG bears little relationship either to the intelligence of the child or to the presumed degree of brain damage as judged by physical disability, though there appears to be a relationship between the intelligence of the child and resistance to fits despite an abnormal record. (11 refs.) - *Journal summary.*

Centre for Spastic Children
61 Cheyne Walk
Chelsea, London S. W. 3 England

1642 PAUL, W. M., GARE, D. J., & WHETHAM, J. C. Assessment of fetal scalp sampling in labor. *American Journal of Obstetrics and Gynecology*, 99(6):745-752; discussion, 752-753, 1967.

Determination of pH, pCO_2 and base deficit from fetal scalp samples from 146 cases could not differentiate distressed from non-distressed infants, but the presence of a normal pH in suspected fetal distress may permit a more conservative approach to operative intervention. All but a few patients tested were from a low socioeconomic group. Clinical evidence of fetal distress was present in 56 cases;it included bradycardia, tachycardia, or the passage of meconium. A total of 249 scalp samples were obtained during various stages of labor. The technique described by Saling (1964) was used for obtaining samples. The pH values during the first stage of labor were stable at 7.31, but a significant drop to 7.26 occurred during the second stage ($p<0.01$). An increase in CO_2 and base deficit during the second stage of labor caused the decreased pH. Maternal values of pH, CO_2, and base deficit showed a similar pattern correlating significantly with the fetal values ($p<0.05$). Although no predictable relationship between pH and the subsequent state of the baby was found, this does not mean that some relationship does not exist since very few cases of severe acidosis were encountered. When umbilical artery pH was measured after delivery, 4 cases with difficult instrumental deliveries showed a pH below 7.20. Two complications from fetal scalp sampling were encountered. Both involved bleeding. (9 refs.) - *R. Froelich.*

Department of Obstetrics and
Gynecology
University of Toronto
Toronto, Ontario, Canada

1643 RODGER, J. CHRISTINE, KERR, MARGARET M., RICHARDS, I. D. GERALD, & *HUTCHISON, JAMES H. Measurements of oxygen tension in subcutaneous tissues of newborn infants under normobaric and hyperbaric conditions. *Lancet*, 2(7562):232-236, 1968.

The Po_2 of subcutaneous tissue has been measured in a series of newborn infants using a membrane electrode which gives results in terms of mm Hg, and which has a sufficiently rapid response time to demonstrate changes in tissue-Po_2 levels. In 32 infants asphyxia was absent (10 born by spontaneous vertex delivery, 12 by forceps,

10 by cesarean section); 12 infants were moderately asphyxiated but recovered quickly (6 after immersion in 100 percent oxygen at 1 atmosphere absolute). Of 16 severely asphyxiated infants, 8 were resuscitated by tracheal intubation and intermittent positive-pressure (IPP) inflation, and 8 by hyperbaric oxygenation. In the unasphyxiated cases the mean of the lowest tissue-Po_2 levels was lower after cesarean sections than after forceps deliveries, and the mean after the latter was lower than after spontaneous vertex deliveries. These differences were not reflected in the Apgar scores. The mean of the lowest Po_2 values in the moderately asphyxiated cases was significantly lower than in the unasphyxiated cases, but the mean Po_2 level 8 minutes after birth was significantly higher in the 6 infants placed in 100 percent oxygen than in the 6 moderately asphyxiated infants not so treated. In the severely asphyxiated infants the mean Po_2 levels 3 minutes after the start of treatment were identical in the infants treated by IPP and in those treated by hyperbaric oxygenation. The age at which respiration was established was also identical in these 2 groups. The mean of the highest recorded Po_2 levels was significantly higher in the hyperbaric cases than in the intubation cases, and the mean increase from the lowest to the highest Po_2 was also significantly higher. It is concluded that in the severely asphyxiated infant who gives even 1 or 2 feeble gasps after delivery either hyperbaric oxygen or IPP can raise the tissue Po_2 satisfactorily. Our results do not permit of a definite conclusion as to the relative merits of these 2 methods of resuscitation in the infant born beyond the stage of the last spontaneous gasp. (14 refs.) - *Journal abstract.*

*University Department of Child Health
Royal Hospital for Sick Children
Glasgow C. 4, Scotland

1644 ADAMSON, T. M., COLLINS, L. M., DEHAN, M., HAWKER, J. M., *REYNOLDS, E. O. R., & STRANG, L. B. Mechanical ventilation in newborn infants with respiratory failure. *Lancet*, 2(7562):227-231, 1968.

Forty infants with respiratory failure have been treated with mechanical ventilation during an 18-month period. Twelve of the infants were considered to have a hopeless prognosis because of extreme immaturity, congenital malformations, or irreversible birth asphyxia; 12 infants survived, giving a survival-rate of 30 percent, and a survival-rate of 43 percent among the 28 infants who had some prospect of recovery. It is concluded that mechanical ventilation should produce a small but worthwhile reduction in mortality in units equipped for the intensive care of newborn infants, but that no infant should be mechanically ventilated who could survive without this form of treatment. (24 refs.) - *Journal abstract.*

*Department of Pediatrics
University College Hospital
Medical School
London W. C. 1, England

1645 ROBERTS, PETER., THORNFELDT, ROBERT, LANGLEY, IVAN I., & MARK, CARL. Immediate treatment of respiratory distress in the newborn. *American Journal of Obstetrics and Gynecology*, 101(3):293-297, 1968.

Newborn infants with respiratory distress received immediate treatment to correct acidosis and hypoxia. A program concerning the treatment of acidosis before cell damage occurs is presented for obstetricians. Results of the treatment program are reported, and recent discoveries are reviewed. Data are given comparing neonatal mortality in 546 premature infants. Two groups of 184 and 179 Ss, respectively, represent infants born before the new treatment program was instituted, while 183 Ss constitute a group in which all Ss with respiratory distress were cared for under the new program. A mortality table for 77 newborn infants with respiratory distress is also provided. Mortality rates among premature infants are compared before and after the immediate treatment program was instituted. Also mortality rates are compared on the basis of the weight among newborn infants with respiratory distress. The treatment reduced infant mortality among those Ss with respiratory distress syndrome, and the program has been unanimously adopted at the hospital where the study was conducted. (9 refs.) - *L. Spade.*

Emanuel Hospital
Portland, Oregon

1646 WINDLE, WILLIAM F. Asphyxia at birth, a major factor in mental retardation: Suggestions for prevention based on experiments with monkeys. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development*. New York, New York, Grune & Stratton, 1967, Chapter 8, p. 140-147.

An investigation of the brain-damage effects of asphyxia neonatorum deliberately induced at birth in 132 rhesus monkeys revealed that asphyxia lasting for more than 7 minutes resulted in permanent structural brain damage and that increased duration of asphyxia led to greater neural deficit. Animals asphyxiated for 8 to 10 minutes, and some for a longer time, had minimal brain-stem damage and an absence of marked neuromuscular deficit. They were dull behaviorally in that, when compared to controls, they were less reactive and some lacked the emotional outbursts characteristic of the rhesus monkey. Animals asphyxiated for 12 to 15 minutes or longer exhibited maximal damage of the brain-stem with sharply circumscribed, laterally symmetrical and nonhemorrhagic lesions which were primarily limited to the sensory input areas, especially the central nucleus of the inferior colliculus. These monkeys who had neurological deficits which decreased with maturity, may be compared with human MRs and CPs. Additional experiments aimed at mitigating brain-damage revealed that damage was less severe when monkeys asphyxiated for 15 minutes at birth were given an infusion of glucose and sodium carbonate and that it was either absent or drastically reduced when monkeys asphyxiated for 12.5 minutes were infused with glucose and alkali. (14 refs.) - *J. K. Wyatt.*

1647 NATHAN, ERLING. Severe hydrops foetalis treated with peritoneal dialysis and positive-pressure ventilation. *Lancet*, 1(7557):1393-1396, 1968.

Survival from hydrops fetalis is extremely rare, though some success has been reported with venesections, laparocentesis, positive-pressure ventilation, antibiotics, and digitalis. A method of treating hydropic infants is described. It consists of positive-pressure ventilation and removal of the edema by peritoneal dialysis (which has not previously been described in the treatment of this condition). Four patients all severely rhesus immunized were treated. Two survived without any complications. Two died of respiratory problems at a time where the dialysis had been completed and the edema had been removed. These patients were very premature, born 9 and 16 weeks before the calculated date of birth. (18 refs.) *Journal abstract.*

Departments of Pediatrics and
Obstetrics A and B
Rigshospitalet
Copenhagen, Denmark

1648 COOPER, L. V., & DAVIS, J. A. Urinary excretion of free histamine in the newborn infant. *Lancet*, 2(7560):143-146, 1968.

The free histamine excreted in the urine during the first 24 hours of life was assayed fluorimetrically in normal babies, in babies who had developed the respiratory distress syndrome, and babies who had been asphyxiated at birth. Histamine excretion was shown to be unrelated to gestational age, birth-weight, volume of urine voided, and creatinine excretion, and to have a logarithmically normal distribution in the populations studied. Babies with the respiratory distress syndrome and babies with a history of birth asphyxia excreted statistically significantly greater amounts of free histamine during the first 24 hours of life than healthy infants. But there was no significant difference in histamine excretion between the group of babies with respiratory distress and the group with birth asphyxia. (19 refs.) - *Journal abstract.*

Institute of Child Health
Hammersmith Hospital
London, W.12, England

1649 FLYNN, ROBERT J. Exencephalia: Its occurrence in untreated mice. *Science*, 160(3830):898-899, 1968.

Exencephalia has been reported in irradiated CF1 mice but there are no reports of its occurrence in untreated mice of this strain. In the course of establishing disease-free breeding colonies from CF1 female mice delivered of their offspring by cesarean section, exencephalia was seen frequently.

During a 2-week period, 90 litters were delivered; 11 contained exencephalic fetuses, at the rate of one per litter (11 of 90 litters, 12.2 percent; 11 of 1,056 fetuses, 1.04 percent). The prevalence of this anomaly in untreated mice of this strain could contribute to overestimates of the effectiveness of low doses of radiation. (7 refs.) - *Journal abstract.*

Division of Biological and
Medical Research
Argonne National Laboratory
Argonne, Illinois 60439

1650 MACAULAY, DUNCAN, & WATSON, MARJORIE. Hypernatraemia in infants as a cause of brain damage. *Archives of Disease in Childhood*, 42(225):485-491, 1967.

Of 122 children with hypernatremia in infancy who were followed up 1-1/2 to 8 years after initial presentation, 100 gave no history of antecedent nervous disease. Of these, 16 were thought to have sustained brain damage, apparently from the hypernatremia. Over a 7-year period 695 serum sodium determinations were made (with hypernatremia defined as 150 to 235 mEq/l). The illnesses encountered among the 122 Ss included 47 cases of diarrhea and 13 cases of pneumonia. There were 89 survivors, 14 of which were excluded from the study because of neurological disorders known to have been present before the hypernatremia. Of the 16 with brain damage 8 were dead and 8 were alive. Autopsies done on 7 Ss showed diffuse encephalopathy in 3, cerebral infarction in 1, cerebral edema in 1, subarachnoid hemorrhage in 1, and sinus thrombosis in 1. Of the 8 living children with brain damage after hypernatremia, 4 had cerebral dysfunction, 1 had severe brain damage, and 2 were considered backward. Their IQs ranged from below 50 to 75. There appears to be a definite association between brain damage and hypernatremia, but a cause and effect relationship is not clear. Although the actual level of serum sodium does not seem to have prognostic significance, early neurological signs after hypernatremia or the presence of muscular rigidity or marked hypotonia indicates a poor prognosis. Prevention of hypernatremia is a better approach to treatment than management of the established condition. (9 refs.)
R. Froelich.

Duchess of York Hospital for
Babies
Manchester, England

Disease or Disorders of Metabolism, Growth, or Nutrition

1651 HSIA, DAVID YI-YUNG. Biochemical factors in mental retardation. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development.* New York, New York, Grune & Stratton, 1967, Chapter 4, p. 28-44.

Biochemical studies and clinical observations of animals with laboratory-induced PKU and of PKU children have led to a better understanding of the biochemical abnormalities associated with this disorder and have underscored the importance of dietary treatment in preventing MR. The results of experiments in which 4 groups of weanling guinea pigs were fed either a regular diet, a 6 percent phenylalanine diet, a 6 percent L-tyrosine diet, or a 6 percent L-tyrosine diet plus 500 mg of ascorbic acid support the hypothesis that excessive phenylalanine deters either the active movement of 5-hydroxytryptophan to the brain or the hydroxylation of tryptophan. These effects of excessive phenylalanine interact with a physiological decrease in 5-hydroxytryptamine caused by a functional immaturity of the enzyme system, and it is this interaction which appears to be responsible for the altered production of serotonin in newborn PKUs. Accompanying MR may be due to a resulting imbalance of the neurohumoral compounds in the brain. PKU children who received dietary therapy before 2 months of age were considerably more intelligent than children treated at a later time. However, even with optimal treatment in the form of early diagnosis and good dietary therapy, PKU children's mental development was significantly lower than that of their normal siblings. Although early dietary treatment

of PKU children is essential, a significant degree of improvement in mental development has been achieved with children whose treatment was begun later than 2 months of age but before 3 years of age. Data on 9 PKU children who had been off a low-phenylalanine diet for a period of 24 months indicate that the diet can be withdrawn without adverse effects. (49 refs.) - *J. K. Wyatt.*

1652 O'BRIEN, DONOUGH. Some comments on diagnosis and treatment of metabolic abnormalities. In: International seminar on medical genetics, August 31-September 3, 1966. *Alabama Journal of Medical Sciences*, 3(4):461-463, 1966.

The list of metabolic abnormalities must be extended in order to elucidate mechanisms of action and institute appropriate therapy. Newborns in whom therapy would be effective (for example, those with phenylketonuria, homocystinuria, and possibly tyrosinemia) and children who "fail to thrive" provide rich fields of study. Dietary therapy may be effective in removing the offending substrate (low methionine diet for homocystinuria); in providing a cofactor or coenzyme (pyridoxine used in treating cystathioninuria pyridoxine dependency); or providing the product (uridine administration to correct hereditary orotic aciduria. Ideally one would like to restore mutant molecules *in vivo*. (No refs.) *E. L. Rowan.*

Department of Pediatrics
University of Colorado Medical Center
Denver, Colorado 80220

1653 U. S. WELFARE ADMINISTRATION. *Proceedings of International Conference on Inborn Errors of Metabolism.* (Held May 30 - June 3, 1966, Dubrovnik, Yugoslavia.) Washington, D. C., Children's Bureau, 1967, 67 p.

At the International Conference, participants shared data concerning programs of detection, treatment, and management used for PKU and other inborn errors of metabolism and agreed to concentrate future efforts on (1) determining the number of untreated PKUs who grow up normally and (2) on discovering when, how long, and with what results dietary treatment must be used. The nations of Belgium, Germany, Greece, India, Ireland, Israel, Mexico, Pakistan, Poland, Scotland, Sweden, Yugoslavia, and the United States were represented by 37 specialists in inborn errors of metabolism which may cause MR. Papers presented dealt with clinical identification aspects, laboratory diagnostic procedures, a classification system, screening tests, a public health program, and dietary management procedures used with PKU and allied conditions. (47 refs.) - *J. K. Wyatt.*

CONTENTS: Clinical Aspects of Phenylketonuria and Allied Conditions (Jervis); Laboratory Screening and Diagnosis (Guthrie); A Proposed Classification for the Hyperphenylalaninemias (Menkes); Screening Tests for Other Congenital Abnormalities (O'Brien); Phenylketonuria--A Public Health Responsibility in Maryland (White); Dietary Management (Grüter).

1654 JERVIS, GEORGE. Clinical aspects of phenylketonuria and allied conditions. In: U. S. Welfare Administration. *Proceedings of International Conference on Inborn Errors of Metabolism.* (Held May 30-June 3, 1966, Dubrovnik, Yugoslavia.) Washington, D. C., Children's Bureau, 1967, p. 1-4; discussion, 4-16.

Diagnoses of PKU and other conditions accompanied by increased blood levels of phenylalanine require biochemical evidence and cannot be based solely on clinical observations. MR with continuing intellectual deterioration is the most prominent clinical feature of PKU. Other clinical manifestations may include psychotic symptoms, neurological abnormalities (70-90 percent), defect of pigmentation, and dermatitis (20-40 percent). The biochemical characteristics of PKU are a high blood level of phenylalanine and a urinary concentration of phenylpyruvic, o-hydroxyphenylacetic acids, and other derivations of phenylalanine. Incidence of PKU has been reported at between 1:10,000 and 1:20,000. Allied conditions which manifest increased levels of phenylalanine and evidence additional specific clinical characteristics include hyperphenylalaninemia, "high" PKU heterozygotes, and hyperphenylalaninemia with deficiency of transaminase. (2 refs.) - *J. K. Wyatt.*

1655 GUTHRIE, ROBERT. Laboratory screening and diagnosis. In: U.S. Welfare Administration. *Proceedings of International Conference on Inborn Errors of Metabolism.* (Held May 30 - June 3, 1966, Dubrovnik, Yugoslavia.) Washington, D. C., Children's Bureau, 1967, p. 17-21; discussion, 22-28.

Laboratory methods used for PKU include (1) ferric chloride testing of urine, fluorometric testing, and/or paper chromatography for screening; (2) laboratory chromatography procedures for confirmation; and (3) bacterial inhibition assay for monitoring children receiving diet treatment. The results of a test-retest survey of 13 states using an interval of 4-6 weeks between tests indicated that 6 out of 35 cases of PKU in newborns were not identified by the first test. Comparison of the incidence rate in 27 California counties where PKU in newborns was identified by diaper tests using ferric chloride procedures with the incidence rate established in 39 states using the bacterial inhibition assay method indicated that diaper tests not only made for late detection but also detected less than 1/2 the cases. (9 refs.) - *J. K. Wyatt.*

1656 MENKES, JOHN H. A proposed classification for the hyperphenylalaninemias. In: U. S. Welfare Administration. *Proceedings of International Conference on Inborn Errors of Metabolism.* (Held May 30 - June 3, 1966, Dubrovnik, Yugoslavia.) Washington, D. C., Children's Bureau, 1967, p. 29-32; discussion, 33.

A classification system which includes phenylketonuria, phenylalaninemia, tyrosyluria, transient hyperphenylalaninemia, and 3 additional unnamed types is proposed to facilitate differential diagnoses of the hyperphenylalaninemias. Basic distinctions among the 7 types include differences in (1) blood phenylalanine levels, (2) ferric-chloride test results, (3) phenylalanine tolerance levels, (4) the relationship between blood phenylalanine concentration and the amount of phenylpyruvic and o-hydroxyphenylacetic acid excreted, and (5) the permanency of biochemical abnormalities. Types 3 and 4 are accompanied by an abnormal phenylalanine tolerance in 1 of the parents. (18 refs.) - *J. K. Wyatt.*

1657 O'BRIEN, DONOUGH. Screening tests for other congenital abnormalities. In: U. S. Welfare Administration. *Proceedings of International Conference on Inborn Errors of Metabolism.* (Held May 30 - June 3, 1966, Dubrovnik, Yugoslavia.) Washington, D. C., Children's Bureau, 1967, p. 34; discussion, 35-38.

Screening programs for congenital abnormalities should be designed to include appropriate tests related to the needs of the group involved. Newborns should be tested for high blood phenylalanine levels, galactosemia, and homocystinuria. Programs for risk groups such as MRs, the emotionally disturbed, and young children with ill-defined illnesses should include 1-dimensional paper chromatograms of urine and serum, a nitroprusside cyanide test to identify the presence of cystine and homocystine in urine, a determination of the level of serum copper oxidase, a fluorescent galactosemic screening test, a ferric chloride test and either a cetyltrimethylammoniumbromide or a cetylpridinium chloride precipitation test. (No refs.) *J. K. Wyatt.*

1658 WHITE, BENJAMIN D. Phenylketonuria--A public health responsibility in Maryland. In: U. S. Welfare Administration. *Proceedings of the International Conference on Inborn Errors of Metabolism.* (Held May 30 - June 3, 1966, Dubrovnik, Yugoslavia.) Washington, D. C., Children's Bureau, 1967, p. 39-48; discussion, 48-50.

In March 1966 the pilot PKU screening program based on the use of the Guthrie test, which was initiated in 4 hospitals by the Maryland Department of Health in February 1964, was extended to include 44 of the state's 49 hospitals. During the first 15 months of the massive screening program, 80 percent of the infants born in the state were tested. Out of the 55,216 specimens processed, 9 cases of true phenylketonuria were identified and placed on dietary treatment. Follow-up psychological evaluations on 5 of these cases at 8 months of age were encouraging in that there was no evidence of marked MR at that time. The pilot program identified problem areas which required alteration when the massive screening program

was undertaken. Program changes included an increase in the quantity of blood for the specimen in the Guthrie collection unit, the development of follow-up procedures for infants with insufficient quantities of blood in their original sample or for those whose original specimen contained 4 mg percent or more of phenylalanine, daily mailing of specimens to the laboratory, and the establishment of laboratory conditions and procedures conducive to accurate Guthrie test analysis. Follow-up procedures should be conducted by public health agencies and should provide support and information about PKU for parents, nutritional consultation services, family studies, health education, screening of relatives of children with PKU, and screening of all MRs in special education classes. (7 refs.) - *J. K. Wyatt.*

1659 GRÜTER, WERNER. Dietary management. In: U. S. Welfare Administration. *Proceedings of the International Conference on Inborn Errors of Metabolism.* (Held May 30 - June 3, 1966, Dubrovnik, Yugoslavia.) Washington, D. C., Children's Bureau, 1967, p. 51-52; discussion, 52-61.

Of 68 cases of PKU registered at Marburg, Germany, between 1960-1966, 45 were continued on dietary treatment. The management of the 13 oldest Ss was terminated for various reasons, and 10 having severe cerebral damage were not treated. The phenylalanine requirements were determined for various age groups by a column chromatography and microbiologic determinations. If the diet is begun during the first 3 months of life, the child may obtain a normal IQ; the IQ either remains stable or is improved slightly if the diet is begun between 4 and 6 months. No child in this population obtained a completely normal DQ. If dietary treatment is started in the second year, there can be a rise in DQ of 40 points or more. The average improvement at Marburg was 20 points, with final DQs ranging between 23-88. Treatment at age 3 yrs or later can produce good results, but these are rare. If the diet is begun after 7 years, deterioration may be prevented. The physical growth of untreated children is normal, but it is somewhat below average in children on the diet. Treatment is suggested as essential for every child diagnosed in his first or second year. Three- and 4-year-old patients should receive a trial period of 1 year; children age 5 and older should be treated for 1 year when their IQs are above 40. The age for termination of the diet is uncertain. The requirements for normally developing infants are 30 to 50 mg phenylalanine/kg/day; for the 2- to 3-year olds, 20 to 30 mg phenylalanine/kg/day; and for those 4-6, 10 to 20 mg phenylalanine/kg/day. Biochemical control should be directed at phenylalanine levels of 1 to 3 mg percent with a maximum of 4 mg percent. During fever and inflammatory diseases, a supplement of 30 to 50 grams of milk per day is needed. Overtreated patients can be diagnosed by column chromographic analysis of blood and urine rather than by blood phenylalanine estimations. (No refs.) - *B. Bradley.*

1660 FONTAINE, GUY, ed. *Actualités Métaboliques en Pédiatrie, Premiere Série.* (Metabolic Actualities in Pediatrics). Paris, France, Editions Doin, 1967, 401 p, (Price unknown).

A review of the current material concerning rare and frequent hereditary disorders in amino acid metabolism is presented. Clinical, biochemical, and genetic information are correlated to reflect the complete pathology. Current methods of diagnosis and treatment of these new syndromes are given. Articles are well documented. The current importance of amino acid metabolism in pediatrics cannot be underestimated. Each day new diseases are being discovered. This treatise is recommended for the biochemist as well as the pediatrician. - *S. Katz.*

CONTENTS: Les bases biochimiques de l'hérédité (G. Biserte); Considérations générales sur les amino-aciduries héréditaires (R. Havez); Albinisme (L. Boniface); Alcaptonurie (G. Fontaine); La phénylcétonurie (L. Boniface); La cystinurie-lysinurie (J.-P. Farriaux); La maladie des urines "á odeur de sirop d'érable" (G. Fontaine); Le syndrome de de Toni-Debré-Fanconi (J.-P. Farriaux); La maladie de Wilson (Odette Fovet-Poingt); Histidinémie (G. Fontaine); La maladie de Hartnup (J.-P. Farriaux); Les glycinuries (G. Fontaine); Le syndrome de Lowe (Odette Fovet-Poingt); Les anomalies héréditaires du métabolisme de la méthionine (M. Dautrevaux); Les anomalies héréditaires du cycle de l'urée (M. Dautrevaux); Les troubles héréditaires du métabolisme de la proline et de l'hydroxyproline (G. Fontaine).

1661 BISERTE, G. Les bases biochimiques de l'hérédité. (Biochemical basis of heredity.) In: Fontaine, Guy, ed. *Actualités Métaboliques en Pédiatrie, Premiere Série.* (Metabolic Actualities in Pediatrics.) Paris, France, Editions Doin, 1967, p. 13-52.

A review of the biosynthesis, the mechanism of mutations, and the regulation of the synthesis of proteins is presented to elucidate certain hereditary metabolic diseases. The roles of DNA and of messenger, transfer, and ribosomal RNA are cited. Three types of mutations discussed include: deletion, insertion, and substitution. Roles of operator and regulator genes are explained and applications are cited. (23 refs.) - *S. Katz.*

1662 HAVEZ, R. Considérations générales sur les amino-aciduries héréditaires. (General considerations of hereditary aminoacidurias.) In: Fontaine, Guy, ed. *Actualités Métaboliques en Pédiatrie, Premiere Série.* (Metabolic Actualities in Pediatrics.) Paris, France, Editions Doin, 1967, p. 53-75.

A summary of the biochemical and physiological aspects of the metabolism of amino acids and their destiny in the organism is presented. Methods of determining aminoacidemia are discussed along with electrophoretic and chromatographic techniques. Aminoaciduria varies with age but in the normal adult is relatively constant. The rate of elimination of beta-aminoisobutyric acid is hereditary. The renal function in aminoaciduria is revealed in a comparative study of aminoacidemia and aminoaciduria. Two types of congenital aminoacidurias of renal origin are discussed: (1) a hereditary condition affecting the metabolism of substances of non-amino acid nature, (2) anomalies of the convoluted tubules causing selective excretion of amino acids. Congenital metabolic disorders can be diagnosed clinically and biochemically. The case of PKU is cited as an example. Satisfactory results in the prevention of mental deficiency are obtained where phenylalanine can be reduced in the diet. Multiple interactions of metabolic pathways are the basis of interpretations of mental retardation. (No refs.) *S. Katz.*

1663 EFRON, MARY L., YOUNG, DEAN, MOSER, HUGO W., & MacCREADY, ROBERT A. A simple chromatographic screening test for the detection of disorders of amino acid metabolism. In: U. S. Children's Bureau. *New Frontiers in Mental Retardation.* (Clinical Directors' Mental Retardation Conference held June 5-7, 1966, Asilomar, California.) Washington, D. C., 1966, p. 79-92.

A new chromatographic technique which uses whole blood or urine collected on filter paper, dried, and then autoclaved for 3 minutes at 250° F provides a simple method for detecting disorders distinguished by an elevated concentration of blood amino acid. Ninhydrin-stained chromatograms successfully detect maple-syrup urine disease, tyrosinosis, hyperglycemia, homocystinuria, and oasthouse disease. In order to identify citrullinuria and histidinemia, specific stains over ninhydrin must be used. Isatin-stained chromatograms are used to detect phenylalanine, while isalin-stained chromatograms followed by the Ehrlich reagent detect hyperprolinemia and hydroxyprolinemia, 2 disorders of imino acid metabolism. This method has also been used for follow-up studies of blood concentration. Used in this way the technique is cheaper, more accurate, and more convenient than other systems and it also avoids venipunctures. (44 refs.) - *J. K. Wyatt.*

1664 SNYDERMAN, SELMA. Diagnosis and treatment of metabolic disorders. In: U. S. Children's Bureau. *New Frontiers in Mental Retardation.* (Clinical Directors' Mental Retardation Conference held June 5-7, 1966, Asilomar, California.) Washington, D. C., 1966, p. 93-102.

Although 35 different inborn errors of metabolism--all of which are associated with MR and the majority of which are errors in amino acid metabolism--have been identified to date, the diagnostic and treatment procedures developed for maple-syrup urine disease (MSUD) and PKU may be used as treatment and management models for all disorders of amino acid metabolism. Diagnostic procedures center either on the identification of abnormal accumulations of normal or unusual metabolic compounds--either of which is a sign of enzyme inactivity--or on the measurement of the involved enzyme. Treatment involves dietary therapy aimed at biochemical alteration through limited intake of

substances which cannot be metabolized. Successful dietary management requires a knowledge of basic nutritional requirements and adjustments during times of fever or illness. The length of time required for dietary therapy in MSUD and PKU has not been determined. Therapy should begin as early as possible, and with MSUD there is some indication that treatment must be continued throughout life. (No refs.) - *J. K. Wyatt.*

1665 BONIFACE, L. La phénylcétonurie. (Phenylketonuria.) In: Fontaine, Guy, ed. *Actualités Métaboliques en Pédiatrie, Premiere Serie.* (Metabolic Actualities in Pediatrics.) Paris, France, Editions Doin, 1967, p. 111-131.

A review of the historical, clinical, biochemical, diagnostic, genetic, and physiopathological aspects of PKU and its treatment is presented. Clinical symptoms manifested are light complexion, typical odor of the urine, psychomotor deficits, convulsions, and hypertonicity. Biochemically, a deficit in phenylalanine hydroxylase causes abnormal metabolism of tyrosine and consequently leads to decreased melanine (light skin and hair) and adrenalin production. Current methods of diagnosis are: (1) Guthrie test, (2) Folling test, and (3) Phenistix. PKU is transmitted by an autosomal recessive with an incidence of 1/10,000. The heterozygote can now be identified with tests indicating increased levels of phenylalanine and tyrosinemia. Abnormal cerebral metabolism and intellectual deficit are due to decreased serotonin (abnormal metabolism of tryptophane). Current treatment consists of a diet reduced in phenylalanine and administered as soon as possible. When treatment is begun at an early age (within the first month of postnatal life), the prognosis is favorable and normal intellectual development can be expected. (50 refs.) *S. Katz.*

1666 FARRIAUX, J.-P. La cystinurie-lysinurie. (Cystinuria.) In: Fontaine, Guy, ed. *Actualités Métaboliques en Pédiatrie, Premiere Série.* (Metabolic Actualities in Pediatrics). Paris, France, Editions Doin, 1967, p. 133-158.

Cystinuria is a hereditary congenital disorder involving the excretion of large quantities of cystine, lysine, arginine, and ornithine. Concretions of cystine are formed and can obstruct passage of urine in the excretory apparatus. Clinical symptoms present are: nephritic colic, emission of calculi, lumbar pain, bacteriuria, albuminuria, hematuria, and pyrexia. The diagnosis, confirmed with X-rays, is usually bilateral and obstruction is in the ureter. Surgical intervention is often necessary. Lysine, arginine, and ornithine are transported via the same mechanism; however, cystine is reabsorbed differently. A new disulfide (a combination of cystine and homocystine) has been found in the urine of cystinurics. Recessive cystinurics are homozygous and usually related; incomplete recessive cystinurics only exhibit abnormal excretion of amino acids. Among the principal forms of treatment are: (1) special diets, (2) alkalinization of the urine, and (3) an increase of diuresis. (49 refs.) *S. Katz.*

1667 FONTAINE, GUY. La maladie des urines "à odeur de sirop d'érable". (Maple sirup urine disease.) In: Fontaine, Guy, ed. *Actualités Métaboliques en Pédiatrie, Premiere Série.* (Metabolic Actualities in Pediatrics.) Paris, France, Editions Doin, 1967, p. 159-181.

Classical clinical symptoms of maple sirup urine disease such as convulsions (tonic, clonic, and grand mal), difficulty in suction, and respiratory problems appear 3-5 days after birth. Less typical symptoms such as lethargy and ataxia, occur after 12 months. Hypoglycemia has been observed in a number of cases. Autopsies reveal an enlarged, edematous, jellylike brain much paler than normal, making differentiation of grey and white matter difficult. The lesions are non-specific and similar to those of PKU. A delay in mylenization is noticeable. Other abnormalities observed are infectious lesions of bronchopneumopathy, hepatomegaly, hypertrophy of the kidneys, and birefringent crystals in nervous tissue. Urinary and plasma levels of branched-chain amino acids (leucine, isoleucine, valine) are increased, as are corresponding alpha-ketonic derivatives. Urinary levels of indole derivatives, principally indolacetic acid, are elevated. The intellectual deficit results from a blockage of the oxidative decarboxylation of the 3 branched-chain amino acids that increase the levels of keto-leucine and keto-valine which inhibit glutamic decarboxylase and diminish the cerebral level of gamma amino butyric acid. Isoleucine is responsible for the

characteristic odor. This affliction is more rare and lethal than PKU. It is transmitted by an autosomal recessive. Recommended treatment is regulation of the diet during the first few days after birth with complete suppression of 3 branched-chain amino acids followed by dosage one-third that of the normal. (46 refs.) - *S. Katz.*

1668 FARRIAUX, J.-P. Le syndrome de de Toni-Debré-Fanconi. (Fanconi's syndrome.) In: Fontaine, Guy, ed. *Actualités Métaboliques en Pédiatrie, Premiere Série.* (Metabolic Actualities in Pediatrics.) Paris, France, Editions Doin, 1967, p. 183-205.

Fanconi syndrome is characterized by resistant rickets, amino diabetes, and hyperchloremic acidosis. Retarded skeletal development begins 6 months after birth and results in dwarfism and rickets. Hypotrophy, the earliest symptom, is surpassed after 12 months of age by rickets, the principal symptom. Plasma analysis indicates decreased phosphoremia, increased alcaline phosphatase activity, metabolic acidosis, disturbances in electrolyte balance, and aminoacidemia. Urinalysis reveals hyperphosphaturia and hyperaminoaciduria. Three principal etiologies are: (1) acquired forms of disease, (2) cystinosis, and (3) Fanconi's idiopathic syndrome. Cystinosis, a congenital disorder transmitted by an autosomal recessive, is due to an enzymatic defect in the conversion of cystine into cysteine. As a result cystine crystals appear in the eye and other organs. Successful treatment of this fatal disease has been achieved with thiol compounds. (92 refs.) *S. Katz.*

1669 FOVET-POINGT, ODETTE. La maladie de Wilson. (Wilson's disease,) In: Fontaine, Guy, ed. *Actualités Métaboliques en Pédiatrie, Premiere Série.* (Metabolic Actualities in Pediatrics.) Paris, France, Editions Doin, 1967, p. 207-234.

Wilson's disease, a rare hereditary disorder prevalent among children, causes hepatolenticular degeneration due to a defect in copper metabolism. Early symptoms consist of nausea, vomiting, abnormal tiredness, awkwardness, and irritability. Typical extrapyramidal symptoms are hypertonicity, tremor, and choreal or athetoid movements. Other neurological symptoms exhibited are cerebellar tremor, Babinski sign, and diplopia. Intellectual deficit, apathy, and depression resulting in suicidal tendencies have been observed in children and adolescents. Nonneurological findings include latent cirrhosis, abdominal dropsy, splenomegaly, and corneal pigmentation. The pathology is attributed to a deficit in ceruloplasmine, the plasma protein which fixes copper. The plasma level of copper is increased and copper is deposited in the basal ganglia, liver, cornea, and kidneys. Two theories have been suggested: the presence of an abnormal protein which binds copper and a defective synthesis of ceruloplasmine. This affliction is transmitted as an autosomal recessive and consanguinity is frequent. The only efficient means of treatment is penicillamine which fixes and enables the copper to pass out in the urine. Treatment of asymptomatic patients presents a problem. (21 refs.) - *S. Katz.*

1670 FONTAINE, GUY. Histidinémie. (Histidinemia.) In: Fontaine, Guy, ed. *Actualités Métaboliques en Pédiatrie, Premiere Série.* (Metabolic Actualities in Pediatrics.) Paris, France, Editions Doin, 1967, p. 235-263.

Histidinemia, a rare and non-fatal hereditary metabolic disorder involving excess quantities of histidine in the blood, often afflicts blonde, blue-eyed children. The most pronounced clinical symptoms are impairment of articulation and organization of speech. MR has been observed in some cases. A positive coloration test for ferric chloride has been noted. Chromatographic analysis indicates an increase in plasma and urinary histidine. The etiology is a metabolic block of histidase, an enzyme which converts histidine into urocanic acid. This results in a decrease of glutamic acid, the normal metabolic product of catabolism of histidine, and an increase in imadazole derivatives of histidine. Also a decrease in serotonin and an increase in histamine are apparent. Transmission is via an autosomal recessive. Tests on heterozygotes indicate above normal plasma histidine levels. No specific treatment is available; however, a restriction of the protein diet to the minimum level is highly recommended. (37 refs.) *S. Katz.*

1671 FARRIAUX, J.-P. La maladie de Hartnup. (Hartnup's disease.) In: Fontaine, Guy, ed. *Actualités Métaboliques en Pédiatrie, Premiere Série.* (Metabolic Actualities in Pediatrics.) Paris, France, Editions Doin, 1967, p. 265-293.

Characteristic symptoms of Hartnup's disease, a rare hereditary congenital metabolic disorder, are photosensible pellegral dermatitis, cerebellar ataxia, renal aminoaciduria, and urinary excretion of indole derivatives. Other neurological symptoms include diplopia, nystagmus, and intentional tremor. Loss of appetite, vomiting, and diarrhea also occur. The etiology stems from defective metabolism of tryptophane in the intestinal flora. A deficit in the enzyme tryptophane-pyrolase results in a decrease in nicotinamide and accounts for the cutaneous lesions. The ataxia is due to an increase in indolacetic acid (IAA). Abnormal intestinal absorption of tryptophane has been observed. This disease is transmitted by an autosomal recessive and consanguinity has been observed in several cases. Treatment with nicotinamide has received good results. (50 refs.) - *S. Katz.*

1672 FONTAINE, GUY. Les glycinuries. (Glycinurias.) In: Fontaine, Guy, ed. *Actualités Métaboliques en Pédiatrie, Premiere Série.* (Metabolic Actualities in Pediatrics.) Paris, France, Editions Doin, 1967, p. 295-326.

Several diseases affecting metabolism of glycocoll and resulting in glycinuria are reviewed. Glycinurias are divided into renal glycinurias and prerenal glycinurias. One of the former, idiopathic hyperglycinemia associated with hyperglycinuria, is characterized by vomiting, somnolence, ketosis, retarded physical and mental development, neutropenia, thrombopenia, and osteoporosis. Serological tests and urinalysis reveal increased levels of glycocoll. Onset of this condition is rapid, occurring as early as 24 hours after birth and often becoming fatal. Although various theories have been proposed as to the etiology, defective transformation of glycine to serine is the most plausible. It appears to be transmitted as an autosomal recessive. A reduced protein diet is recommended. Four other syndromes affecting glycocoll metabolism are: hyperglycinuric osteomalacia, glycinuria associated lithiasis, glucoglycinuria, and hyperprolinuria. Hyperglycinuria was found in all 4. (46 refs.) - *S. Katz.*

1673 FOVET-POINGT, ODETTE. Le syndrome de Lowe. (Lowe's syndrome.) In: Fontaine, Guy, ed. *Actualités Métaboliques en Pédiatrie, Premiere Série.* (Metabolic Actualities in Pediatrics.) Paris, France, Editions Doin, 1967, p. 327-352.

Lowe's syndrome, a congenital hereditary metabolic disorder, is characterized by MR, hydropthalmos, organoaciduria, and hypoammoniogenesis. Neurological symptoms are hypotonicity, MR (IQ rarely above 50), and tendon areflexia. Ophthalmological findings include congenital cataracts and glaucoma. Rickets has also been observed. Biological tests indicate proteinuria, glycosuria (of tubular origin), decrease in creatinine clearance, hypophosphatemia with hyperphosphaturia, hyperchloremic acidosis, alkalinization of the urine, and hyperaminoaciduria. Although the etiology is unknown, various theories have been proposed concerning the primary and secondary effects of this disease. This oculocerebrorenal syndrome appears to be transmitted by an X-linked recessive. The diagnosis can be made at 3 months of age. No specific treatment is available. The prognosis from an optical and metabolic standpoint is favorable. (57 refs.) - *S. Katz.*

1674 DAUTREVAUX, MICHEL. Les anomalies héréditaires du métabolisme de la méthionine. (Hereditary anomalies of methionine metabolism.) In: Fontaine, Guy, ed. *Actualités Métaboliques en Pédiatrie, Premiere Série.* (Metabolic Actualities in Pediatrics.) Paris, France, Editions Doin, 1967, p. 353-362.

The absence of cystathionine synthetase and another enzyme which cleaves cystathionine results in homocystinuria and cystathioninuria respectively. Chromatographic and electrophoretic studies indicate urinary levels of homocysteine and cystathionine. Enzymes are measured from liver biopsy. Characteristic symptoms of homocystinuria are MR(TMR), duck walk, blonde and fine hair, genu valgum, ectopic lens, pulmonary emboli and thrombosis (often fatal), and excess lipids in the liver. A predominance among Caucasians has been noted, and transmission is by an autosomal recessive. Cystathioninuria is also associated with MR and transmitted as an autosomal recessive. Cystathionine appears in plasma, CSF, and urine. Mental deficiency appears to be due to an insufficiency of terminal metabolites. A diet poor in methionine and rich in cystine is recommended. (18 refs.) - *S. Katz.*

326-079 O - 68 - 4

1675 DAUTREVAUX, MICHEL. Les anomalies héréditaires du cycle de l'urée. (Hereditary anomalies of the urea cycle.) In: Fontaine, Guy, ed. *Actualités Métaboliques en Pédiatrie, Premiere Série.* (Metabolic Actualities in Pediatrics.) Paris, France, Editions Doin, 1967, p. 363-376.

Metabolic blocks at various steps in the urea cycle result in disorders characterized by the appearance of an abnormal amino acid (in the urine, plasma, or CSF), MR, and hereditary transmission. Metabolites and enzymes in the cycle were determined by chromatographic and electrophoretic techniques. Four conditions--hyperammoniemia, citrullinuria, arginosuccinyluria, and arginuria--were discovered and the location of the blockage was given. The basis of classification was the abnormal amino acid discovered. Thyroxine was found to stimulate synthesis of the enzymes of the urea cycle and possibly presents a future means of treatment. Urea production was normal in all cases. (24 refs.) - *S. Katz.*

1676 FONTAINE, GUY. Les trouble héréditaires du métabolisme de la proline et de l'hydroxyproline. (Hereditary disorders in proline and hydroxyproline metabolism.) In: Fontaine, Guy, ed. *Actualités Métaboliques en Pédiatrie, Premiere Série.* (Metabolic Actualities in Pediatrics.) Paris, France, Editions Doin, 1967, p. 377-401.

The case of an 11-year-old TMR girl afflicted with hyperhydroxyprolinemia is reviewed. Chromatographic studies revealed large quantities of free hydroxyproline (OH PRO) in the urine. This condition resembles characteristics of prerenal aminoaciduria. The etiology appears to be a deficit in OH PRO oxydase. The mode of genetic transmission is unknown. As OH PRO is a non-essential amino acid which the body can readily synthesize, dietary treatment is not recommended. Hyperprolinemia is characterized by increased plasma levels of proline (PRO) and elevated urinary excretion of PRO, OH PRO, and glycine (GLY). Three cases were reviewed, 2 of which presented microscopic hematuria and chronic urinary infection as secondary features. This anomaly in tubular reabsorption of PRO, OH PRO, and GLY results from an enzymatic defect in transport of these 3 amino acids in the kidney. Two phenomena, prerenal aminoaciduria and renal aminoaciduria, enter into the etiology. Transmission is by an autosomal recessive. (14 refs.) - *S. Katz.*

1677 CANELAS, HORACIO M., DE JORGE, FRANCISCO BASTOS, & TOGNOLA, WALDIR A. Metabolic balances of copper in patients with hepatolenticular degeneration submitted to vegetarian and mixed diets. *Journal of Neurology, Neurosurgery, and Psychiatry,* 30(4):371-373, 1967.

Two patients with hepatolenticular degeneration who were given vegetarian and mixed diets were found to have a decreased positive copper balance when on the vegetarian diet. Case 1 was a 22-year-old woman who had had symptoms for 1 year; case 2 was a 27-year-old man who had developed a mental disorder 2 years before. Both had bilateral Kayser-Fleischer corneal rings and severe neurological symptoms. Mean blood serum copper levels were 29 and 45 μg/100 ml respectively. In case 1 the average daily copper balance on a mixed diet was +413 μg; this decreased to +126 μg on a vegetable diet. In case 2 the copper balance decreased from +495 μg to +83 μg. The increase in fecal copper supports the idea that copper is strongly bound to some unabsorbed component of the vegetarian diet. There was no change in blood serum copper and no significant change in urinary output of copper. When D-penicillamine was given together with the vegetarian diet, the copper balance became strongly negative. The blood copper increased as the result of a rise in the direct reacting copper. This study supports 3 previous reports that a meatless diet results in a decreased positive copper balance. (12 refs.) - *R. Froelich.*

Clinica Neurologica
Caixa Postal 3461
São Paulo, SP, Brazil

1678 BENNETT, ROBERT A., & HARBILAS, EUGENE. Wilson's disease with aseptic meningitis and penicillamine-related cheilosis. *Archives of Internal Medicine,* 120(3):374-376, 1967.

A 19-year-old male is the first reported case to exhibit aseptic meningitis as the initial manifestation of Wilson's disease and also the first to develop cheilosis and gingivostomatitis in reaction to penicillamine therapy. Prior to the meningitis he had developed glomerulonephritis, an anaphylactic reaction to penicillin, sudden massive hematemesis, and a deficiency of clotting factors II, V, VII, IX, and X. He had

been known to have gynecomastia, splenomegaly, spider nevi, and abnormal liver tests. Meningitis developed acutely with symptoms of fever, headache, photophobia, nuchal rigidity, agitation, and lethargy. Cerebrospinal fluid showed lymphocytosis and increased protein but negative cultures. The S recovered then had 2 recurrent episodes before developing other neurological signs which included a shuffling gait, frequent drooling, expressionless face, and severe behavioral disturbances. Kayser-Fleischer rings were present, and laboratory studies were consistent with Wilson's disease. Penicillamine therapy was started despite the known penicillin allergy, and he improved rapidly. The oral lesions, though severe, did not return after penicillamine therapy was reimplemented. (5 refs.) *R. Froelich.*

2666 First Avenue
San Diego, California 92103

1679 GROSS, JOHN B., GOLDSTEIN, NORMAN P., RANDALL, RAYMOND V., & ROSEVEAR, JOHN W. Intake-excretion studies of fat and nitrogen in 7 patients with hepatolenticular degeneration (Wilson's disease). *American Journal of Digestive Diseases*, 12(7):720-724, 1967.

Intake-excretion studies of fat and nitrogen in 7 patients with Wilson's disease were performed in an unsuccessful attempt to determine the pathogenetic basis for steatorrhea in this disorder. All patients were adults and had clinical signs of Wilson's disease including neurological abnormalities and Kayser-Fleischer corneal rings. Three had liver biopsy evidence of cirrhosis, and 6 had absent or decreased ceruloplasmin activity in the serum. The intake-excretion studies were done by the standard technique described by Wollaeger. Two patients with cirrhosis were found to have slight to moderately increased fecal fat excretion (steatorrhea) with peak fecal fat values of 16.5 and 9.5 gm daily. When clinical improvement occurred in these 2 patients, the fecal fat became normal. Fecal nitrogen excretion was normal in all 7 patients. Treatment consisted of a diet low in copper and sodium but high in protein, carbohydrate, and vitamins; D-penicillamine; carbacrylamine resin; a hexavitamin; vitamin K; and extra rest. The steatorrhea in these 2 cases was not greater than that seen in patients with viral hepatitis or Laennec's cirrhosis. Although the pathogenesis of steatorrhea in Wilson's disease remains conjectural, it could be related to the liver disease. (14 refs.) - *R. Froelich.*

Section of Medicine
Mayo Clinic
Rochester, Minnesota 55901

1680 CHASE, H. PETER, GOODMAN, S. I., & O'BRIEN, DONOUGH. Treatment of homocystinuria. *Archives of Disease in Childhood*, 42(225):514-520, 1967.

A simple and workable low methionine exchange diet produced a substantial reduction of serum methionine levels in 5 children with homocystinuria, while treatment with pyridoxine, serine, cysteine, or penicillamine had no significant effect on serum methionine. The children, 4 of whom were female, were from 2 unrelated Spanish-American families. One female had a seizure history. At time of diagnosis the children ranged in age from 1-1/2 to 12 years and had IQs ranging from below 50 to 78. Clinical findings included ectopia lentis (2), malar flush (5), pes cavus (5), genu valgum (5), and pectus carinatum (3). The dosage of agents was: 50 mg pyridoxine intramuscularly, twice daily; 2 gm serine orally, twice daily; and 100 mg/kg/day penicillamine, orally. The average pretreatment serum methionine levels ranged from 0.538 to 1.128 μmole/ml. The average methionine levels after 1, 2, and 3 weeks of a low methionine diet ranged from 0.082 to 0.283 μmole/ml. Serum methionine levels 2 hours after methionine loading were higher in the patients than in 8 normal controls. When 12 unaffected family members were given a methionine load, all 4 parents showed higher levels. A heterozygous carrier state was demonstrated in 1 sibling from each family and in 3 grandparents. In 1 of the 4 testings, 1 patient had increased platelet adhesiveness. (24 refs.) - *R. Froelich.*

Pediatric Biochemistry Laboratory
University of Colorado Medical Center
Denver, Colorado

1681 MARTENET, A. C., WITMER, R., & SPEISER, P. Alterations oculaires dans l'homocystinurie. (Ocular alterations in homocystinuria.) *Opthalmologica*, 154(4):318-322; discussion, 322-323, 1967.

A homocystinuric 8-year-old boy presented myopia, phakoma, and ectopia lentis. Bilateral lentectomy was successfully performed and aphakic glasses were prescribed. A substance which was amorphic, hyaline-like, and eosinophilic, and which reacted positively to Schiff's reagent was found covering the smooth part and the basement membrane of the non-pigmented ciliary epithelium and the zonule fibers. This substance was probably homocystine since chromatographic tests indicated homocystine and methionine present in the aqueous humor. (5 refs.) *S. Katz.*

Clinique Ophthalmologique
de L'Universite
Ramistrasse 100
8006 Zurich, Switzerland

1682 PERRY, THOMAS L., HANSEN, SHIRLEY, LOVE, DONNA L. Serum-carnosinase deficiency in carnosinaemia. *Lancet*, 1(7554):1229-1230, 1968.

Normal human serum contains an enzyme that hydrolyzes the dipeptides carnosine and anserine into their constituent aminoacids. An assay method was developed which showed that serum carnosinase activity is relatively high in normal adults, and lower in young children. Little or no carnosinase activity was found in the sera of 2 children who had carnosinemia associated with neurological disease and mental defect. Serum-carnosinase determination may prove useful in other patients who are found to have a non-dietary carnosinemia or carnosinuria. (6 refs.) *Journal abstract.*

Department of Pharmocology
University of British
Columbia
Vancouver 8, Canada

1683 Carnosinemia, seizures, and psychomotor retardation. *New England Journal of Medicine*, 277(23):1263-1264, 1967. (Editorial)

It now seems clear that there are 2 progressive pathological conditions of the CNS that involve abnormal metabolism of carnosine (beta-alanyl histidine) or anserine (beta-alanyl-1-methyl histidine). One disorder (group 1) occurs in patients with juvenile amaurotic idiocy and increased urinary excretion of carnosine, anserine, histidine, and 1-methyl histidine. The other disorder (group 2) consists of clinical features resembling "infantile spasm and hypsarhythmia" and increased urinary excretion of carnosine and anserine. These 2 disorders are definitely distinct and may also have distinct biochemical anomalies. Both have an imidazole aminoaciduria, but 2 patients with group 2 also had increased serum carnosine. This suggests that the aminoaciduria in group 1 is of renal origin while in group 2 it represents a generalized disturbance of imidazole metabolism. Group 2 patients did not excrete 1-methyl histidine and may have had a carnosinase deficiency. Since a neurological disturbance existed in both groups, it has been proposed that a deficiency of gamma-aminobutyric acid in the brain is the cause of the seizures and neurological symptomatology. This deficiency is brought about at the expense of an increased brain level of homocarnosine. (7 refs.) - *R. Froelich.*

1684 ROSENBLOOM, FREDERICK M., KELLEY, WILLIAM N., MILLER, JOHN, HENDERSON, J. FRANK, & *SEEGMILLER, J. EDWIN. Inherited disorder of purine metabolism. *Journal of the American Medical Association*, 202(3): 175-177, 1967.

Patients with CNS disorder characterized by MR, choreoathetosis, spasticity, and automutilation of the fingers and lips were found to have a deficiency of hypoxanthine-guanine phosphoribosyltransferase (PRTase) in brain tissue, liver, fibroblasts, and erythrocytes. The purpose of the study was to find a relationship between the neurological symptoms and biochemical defects. Three to 5 controls were examined in order to determine normal distribution of PRTase activity. The brain had much higher activity than the rest of the body, with the highest activity occurring in the basal ganglia. If this indicates that PRTase activity is of greatest importance in the basal ganglia, then absence of this enzyme should have the greatest effect there. The neurological symptoms in fact are attributable to a dysfunction of the basal ganglia. Cerebrospinal fluid (CSF) from 4 patients with the complete syndrome had an oxypurine (hypoxanthine and xanthine) concentration that was 4 times higher than normal and that was also higher than levels in plasma. Patients with other neurological disorders

were used as controls. The high oxypurine concentration appeared to play a role in the development of neurological disease. Two patients were treated with allopurinol which was effective in decreasing the production of uric acid but caused a further increase of oxypurines in the CSF. The clinical status of the patients did not change. (13 refs.) - *R. Froelich.*

*National Institute of Arthritis and Metabolic Diseases
Bethesda, Maryland

1685 SCHNEIDER, JERRY A., BRADLEY, KATHRYN, & SEEGMILLER, J. E. Increased cystine in leukocytes from individuals homozygous and heterozygous for cystinosis. *Science,* 157(3794):1321-1322, 1967.

In patients with cystinosis, the concentration of free cystine in leukocytes was 80 times greater than normal, and 6 times the normal content for their parents. This is the first demonstration of an abnormality in heterozygotes for this rare inherited disease of childhood. Three-quarters of the cystine was recovered in the granular fraction of cystinotic leukocytes. (18 refs.) *Journal abstract.*

National Institutes of Health
Bethesda, Maryland 20014

1686 OBERHOLZER, V. G., LEVIN, B., BURGESS, E. ANN, & YOUNG, WINIFRED F. Methylmalonic acidura: An inborn error of metabolism leading to chronic metabolic acidosis. *Archives of Disease in Childhood,* 42(225): 492-504, 1967.

A new form of congenital metabolic acidosis characterized by a block in the conversion of methylmalonic acid to succinic acid is described and 2 case histories given. Case 1 was a male who developed intermittent vomiting at 7 weeks of age and had progressively severe episodes of metabolic acidosis with MR, hypotonia, respiratory infections, and dehydration. Treatment consisted of alkali supplements, sodium citrate, and potassium acetate. He improved when he was 1-1/2 years old but developed a fatal episode of acidosis at 2 years of age. Diagnosis was made 7 years after the S's death, when examination of stored plasma samples revealed increased levels of methylmalonic acid. Case 2 was a female who developed intermittent vomiting and metabolic acidosis at 3 days of age and was physically and mentally retarded during the first year of life. Following alkali treatment she appeared less MR and at 5 years of age scored 100 on the Merrill-Palmer IQ scale. Diagnosis was made when she was 5-1/2 years old, and she is now doing well with alkali therapy. Both children showed impaired urea and creatinine clearances. Case 1 showed a moderate aminoaciduria, mainly glycine, and case 2 showed a low hydrogen ion clearance index. Evidence suggests that the disorder involves a metabolic block in the conversion of methylmalonyl coenzyme A to succinyl coenzyme A. This inborn error of metabolism is probably inherited as an autosomal recessive. (14 refs.) - *R. Froelich.*

Queen Elizabeth Hospital for Children
Hackney Road
London E. 2, England

1687 SCHÄRER, K., MARTY, ANNE, & MÜHLETHALER, J. P. Chronic congenital lactic acidosis: A fatal case with hyperphosphatemia and hyperlipemia. *Helvetica Paediatrica Acta,* 23(2):107-127, 1968.

An infant with chronic idiopathic congenital lactic acidosis is described who presented at 4 months with attacks of tachypnea, convulsions, lethargy, muscular hypotonia, psychomotor retardation and obesity. Lactate and pyruvate levels were increased in blood and urine. Serum phosphorus and plasma lipids were high. A review of the few reported cases of congenital lactic acidosis is given. The course is often fatal as in our case. Muscle and adipose tissue seem to be primary sites of the metabolic alteration, the basic mechanism of which remains unknown. A secondary defect in the turnover of the Krebs cycle is suggested by an increased urinary excretion of α-ketoglutarate. Treatment with sodium bicarbonate was followed by a transient improvement, which is attributed mainly to facilitated renal excretion of lactate and hydrogen ions. (55 refs.) - *Journal summary.*

Department of Pediatrics
Kantonsspital
Aarau, Switzerland

1688 POLLITT, R. J., JENNER, F. A., & MERSKEY, H. Aspartylglycosaminuria: An inborn error of metabolism associated with mental defect. *Lancet*, 2(7562):253-255, 1968.

Clinical and chemical studies on a brother and sister with severe mental defect showed that both excreted abnormal amounts of 2-acetamido-1-(beta-L-aspartamido)-1, 2-dideoxyglucose. The enzyme responsible for hydrolyzing this compound has been demonstrated in normal human seminal fluid, but was apparently absent from that of the brother. A generalized lack of the enzyme would account for the chemical finding in these patients. (16 refs.) - *Journal summary.*

University Department of
Psychiatry
Middlewood Hospital
Sheffield S6, England

1689 SCRIVER, A., AVERY, M. E., & MENKES, C. The management of transient tyrosinemia of the newborn. *Pediatrics*, 40(2):308-309, 1967. (Letter: Comment on letter by H. Peter Chase and Donough O'Brien)

The significance of neonatal tyrosinemia must be determined on an individual basis and treatment initiated accordingly. However, one should be careful not to magnify the general significance of transient neonatal tyrosinemia. (4 refs.) - *A. Clevenger.*

1690 CHASE, H. PETER, & *O'BRIEN, DONOUGH. The management of transient tyrosinemia of the newborn. *Pediatrics*, 40(2):308-309, 1967. (Letter)

A high level of tyrosine produces an adverse effect on the development of the CNS in the rat. While the same effect may or may not follow for humans, it would seem wise to limit protein intake and assure adequate intake of ascorbic acid when tyrosine levels exceed 10 mg/100 ml in the second week of life. (1 ref.) - *J. Snodgrass.*

*University of Colorado
Denver, Colorado 80220

1691 ANDERSON, JOHN M., MILNER, R. D. G., & STRICH, SABINA J. Effects of neonatal hypoglycaemia on the nervous system: A pathological study. *Journal of Neurology, Neurosurgery, and Psychiatry*, 30(4):295-310, 1967.

The necropsy findings of 3 untreated and 3 treated infants with hypoglycemia were compared to demonstrate that untreated hypoglycemia during the first week of life is an important cause of brain damage. Four of the 6 children were premature. Laboratory and clinical evidence strongly suggested that all infants had prolonged hypoglycemia during the first few days after birth. Clinical signs of hypoglycemia included periods of apnea (2 cases), convulsions (1 case), irritability, wakefulness, and an abnormal Moro response. Hypoglycemia of below 20 mg glucose/100 ml blood was documented in 5 cases during life and in 1 case after death. The 3 untreated cases died within 55 hours of birth. The 3 treated cases lived 64 hours, 7 1/2 days, and 6 months respectively. The 3 treated infants had the hypoglycemia corrected and died of other reasons. The 3 untreated infants all had severe brain damage which included an indistinct or absent nuclear membrane, pyknotic nuclei, and large vacuoles disrupting motor nuclei. Two of these infants had severe degeneration of nerve cells and glial cells throughout the CNS. Two of the treated infants had only slight microscopic evidence of brain damage and 1 of these had an intraventricular hemorrhage. The pathogenesis of brain damage from neonatal hypoglycemia is discussed. (55 refs.) *R. Froelich.*

The Maudsley Hospital
Denmark Hill
London, England

1692 MARDENS, Y., ADRIAENSSENS, K., & VAN SANDE, M. Glycinurie et iminoacidurie rénales associées à une oligophrénie: Etude clinique et biochimique. (Renal glycinuria and iminoaciduria associated with mental retardation: Clinical and biochemical study.) *Journal of the Neurological Sciences*, 6(2):333-346, 1968.

A 12-year-old MR boy with renal aminoaciduria exhibited convulsive attacks, progressive MR, hypotonicity, abnormal gait, and involuntary movements. The accentuated wrinkles in the child's face gave him an appearance of age beyond his years; a peculiar pigmentation of the skin was also

observed. The patient died at 13 years of age. Chromatographic analysis revealed the presence of excess quantities of proline, hydroxyproline, and glycine (GLY) in the urine. A slight increase in urinary GLY was also noted in the mother. Other biological tests showed abnormal tubular reabsorption of certain amino acids. After an oral loading test with GLY, the excretion of this amino acid was found to be higher in the patient and mother. The etiology seemed to be due to a faulty transport system of monoamino, monocarboxylic amino acids which include GLY. This renal disorder appears to be hereditary with possible X-linked recessive transmission. A correlation is suggested between neurological symptoms and the metabolic disorder. (25 refs.) *S. Katz.*

Departement de Neurochimie
Fondation Born-Bunge
Berchem-Anvers, Belgique

1693 NYHAN, WILLIAM L. Hyperuricemia. In: International seminar on medical genetics August 31-September 3, 1966. *Alabama Journal of Medical Sciences*, 3(4): 449-452, 1966.

A familial disorder of purine metabolism which is probably X-linked is manifested in boys with severe MR, hypertonicity, choreoathetosis, and self-destructive biting. Clinical symptoms of gout including tophi, arthritis, and hematuria with crystalluria may also be present. Hyperuricemia (10 mg/100 ml), increased uric acid excretion (600 mg/day), increased uric acid turnover, and 200 times the normal conversion of glycine to uric acid comprise the biochemical manifestations of this disorder. (No refs.) - *E. L. Rowan.*

Department of Pediatrics
University of Miami
Coral Gables, Florida 33146

1694 RICHARDSON, MARY E., & *BORNHOFEN, JOHN H. Early childhood cerebral lipidosis with prominent myoclonus: Ultrastructural and histochemical studies of a cerebral biopsy. *Archives of Neurology*, 18(1):34-43, 1968.

Brain biopsy on a 9-year-old girl with atypical cerebral lipidosis demonstrated lipid granules in neurons, astrocytes, and blood vessels. Development was considered normal until age 3-1/2 years, when the S developed seizures. Following this she showed progressive neurological deterioration including tremor, mental deterioration, blindness, myoclonus, and muscle wasting. Cerebral biopsy was studied histochemically and by light and electron microscopy. Cortical cytoarchitecture was distorted with severe neuron loss, and remaining neurons were abnormal. Lipid aggregates were found in the smooth membranes of neurons and astrocytes and, less commonly, in endothelial smooth muscle, perithelial, and oligodendroglial cells. The demonstration of lipid accumulation in a variety of cell types suggests a common enzyme defect rather than phagocytosis. (15 refs.) - *W. A. Hammill.*

*University of Arkansas
Medical Center
Little Rock, Arkansas 72201

1695 HUG, GEORGE, & SCHUBERT, WILLIAM K. Lysosomes in Type II glycogenosis. *Journal of Cell Biology*, 35(1):C1-C6, 1967.

The abnormal glycogen-filled lysosomes found in the liver of a 3-month-old girl with typical features of Type II glycogenesis disappeared when an extract from *Aspergillus niger* was administered for 18 days. This treatment was followed by slight improvement in the clinical status and electrocardiographic tracing. Liver biopsy was obtained before and after treatment. Electron photomicrographs before treatment showed the characteristic abnormal lysosomes in abundance in every hepatocyte. There was also cytoplasmic glycogen predominantly of the multigranular variety (alpha particles). After treatment the lysosomes disappeared and in their place were smaller structures which occurred about 1/5 as frequently. The post-treatment specimen could not be distinguished from normal liver by light microscope. The pretreatment liver specimen contained an increased glycogen concentration and decreased alpha glucosidase activity. The after-treatment specimen had normal glycogen concentration and above-normal alpha glucosidase activity. The *Aspergillus niger* extract was infused intravenously in a single daily dose of 7cc. Serum alpha glucosidase activity decreased following treatment. A possible mechanism for the changes in the hepatocyte is pinocytosis, which

would provide vesicles surrounded by membranes that could eventually allow the *Aspergillus niger* enzymes to degrade the lysomal glycogen. (8 refs.) - *R. Froelich.*

Children's Hospital Research
Center
University of Cincinnati
Cincinnati, Ohio 45229

1696 PLÖCHL, E., THALHAMMER, O., & WEISSENBACHER, G. Foudroyant verlaufende Himschädigung bei einem Säugling mit Hyperphenylalaninämie und Hypercalcämie. (Progressive brain damage in an infant with hyperphenylalanemia and hypercalcemia.) *Helvetica Paediatrica Acta*, 23(3):292-304, 1968.

A female infant suffering from hyperphenylalaninemia which must be classified as a phenylketonuria and from an "idiopathic" hypercalcemia is described. Although both troubles were treated early in an effective way, a severe cerebral injury developed, the first signs of which had already appeared when she was 2 months old. An older sister died at the age of 6 months with similar symptoms. Both children presented a severe prenatal dystrophy with a birth weight lower than the tenth percentile. (16 refs.) *Edited journal summary.*

1697 LOO, YEN HOONG. Characterization of a new phenylalanine metabolite in phenylketonuria. *Journal of Neurochemistry*, 14(8):813-821, 1967.

Through the use of radioactive precursors, a new phenylalanine metabolite in the urine and brain of PKU rats was characterized as 2-methyl-3-hydroxy-5-hydroxymethyl-4-pyridylmethylene-beta-phenylethylamine (pyridoxylidene-beta-phenylethylamine) (Metabolite A). The purpose of the study was to clarify the relationship between the biochemistry of PKU and the MR associated with this disorder. Rats were made phenylketonuric with oral phenylalanine and pyridoxine. Injections of (^{14}C) phenylalanine and (^{3}H) pyridoxine gave rise to a doubly labeled metabolite in the urine. When beta-(1-^{14}C) phenylethylamine and (U-^{3}H) pyridoxine served as precursors, the molar ratio of (^{14}C):(^{3}H) incorporated into the metabolite was 0.8:1.0. Pyridoxylidene-beta-phenylethylamine was found in brain tissue of rats treated with marsilid, beta-phenylethylamine, and vitamin B_6. Neurotoxic symptoms were observed in mice given metabolite A via intraperitoneal injection. Metabolite A was characterized by repeated paper chromatography in neutral solvents systems. The properties of the metabolite, including the absorption structure, were very similar to those of synthetic pyridoxylidene-beta-phenylethylamine, including the absorption spectra. These findings suggest that metabolite A may be a neurotoxic factor in PKU. (10 refs.) *R. Froelich.*

Lilly Research Laboratories
Eli Lilly and Company
Indianapolis, Indiana 46206

1698 WAINER, SHEILA C., & METZGER, LOUIS F. A simple device for rapid plating of phenylketonuria specimens for the Guthrie bacterial inhibition assay. *Technical Bulletin of the Registry of Medical Technologists*, 37(7):2 p., 1967.

A simple, inexpensive device for plating and storing PKU blood specimens for the Guthrie bacterial inhibition assay is described and shown to be an efficient, timesaving template. Materials required for construction of 1 template are: 1 block of wood 248 mm x 170 mm x 30 mm, a 3 mm thick sheet of Lucite the same dimensions as the wood block, 6 bronze wood screws, countersink, and a sheet of white paper for the template. The paper is marked with 112 circles in which 1/4 inch disks from autoclaved filter paper blood specimens are placed. The pattern sheet is permanently numbered, and PKU test agar is inverted onto the template. After incubation the specimens are identified by matching numbers on the template with the blood disks. This technique, which has been used with the Guthrie test since 1965, has allowed an increase in the daily work load without sacrificing accuracy or increasing personnel. For example, transferring 101 specimens and 11 control disks requires about 20 seconds. However, care must be exercised to avoid displacement of specimens. (1 ref.) - *R. Froelich.*

Pennsylvania Department of
Health
Division of Laboratories
Philadelphia, Pennsylvania 19130

1699 PITT, D. Phenylalanine maintenance in phenylketonuria. *Australian Pediatric Journal*, 3(3):161-163, 1967.

Of 9 cases of PKU treated by a low phenylalanine diet, the 3 who developed evidence of phenylalanine deficiency were easily treated by addition of appropriate amounts of cow's milk to the diet. Case 1 was a girl who was treated from 17 weeks of age. At 26 months of age she developed vomiting, alopecia, and a perineal rash. When her serum phenylalanine level fell below 1 mg/100 ml, increasing the phenylalanine in her diet resulted in rapid disappearance of the symptoms. At 4 years of age she is slightly MR but otherwise is doing well. Case 2, a boy who had 3 siblings with PKU, was treated from the age of 16 weeks. At the age of 3 1/2 years he developed gastroenteritis, became atonic and listless, and had an anal rash. The serum phenylalanine level was paradoxically elevated because of a breakdown in body protein. Administration of phenylalanine in the diet resulted in quick recovery. Case 3 was a girl who was treated from the age of 7 days. At 2 months of age she developed a perineal rash, which disappeared after addition of cow's milk to the diet. Phenylalanine deficiency should be anticipated during an intercurrent illness. Other causes may be excessive dietary restriction or a dietary error. The symptoms are slight at the beginning. Any deficiency of phenylalanine during periods of anorexia and illness should be calculated and corrected by including cow's milk in the diet. Maintenance levels of serum phenylalanine probably should be around 6 to 7 mg/100 ml to safeguard against this deficiency. (6 refs.) - *R. Froelich.*

Children's Cottages Training
Centre
Kew Australia

1700 PONTÉ, C., NUYTS, J.-P., & RYCKEWAERT, PH. L'oligophrenie phenylpyruvique. (Phenylketonuria.) *Medicine Infantile*, 74(3):199-220, 1967.

Clinical, biological, diagnostic, genetic, and therapeutic aspects of PKU are reviewed. Early clinical signs are eczema, vomiting, and convulsions. MR appears later as a dominant feature. PKU children are characterized by blond hair, blue eyes, dry eczemic skin, and retarded dental development. Neurological features are hypertonicity and psychomotor deficit. This disorder is due to the absence of phenylalanine (PA) hydroxylase. Biological tests indicate increased plasma PA, increased urinary phenylpyruvic acid and other metabolites, decreased adrenaline and melanin production, decreased plasma serotonin and its urinary derivative, and increased indolacetic acid. The MR can be attributed to 3 causes: excessive plasma PA which has a toxic effect on the maturation of nervous tissue, a decrease in serotonin, and a decrease in transaminase resulting in diminished glutamic acid. Methods include: (1) the spectro-fluorometric test, (2) the ferric chloride test (Phenistix), and (3) the Guthrie test. The high incidence of consanguinity observed in the families of PKUs indicates recessive transmission. Therapy includes a low protein diet containing minimum PA, tryptophane, vitamin B_6, and an inhibitor of monoamine oxydase. Of 34 patients treated before 2 months of age, 11 obtained IQs of 85 ± 12. The remaining children treated after 2 months of age revealed IQs of 56 ± 26. Ninety-six institutionalized patients never treated had IQs of 17 ± 15. The importance of early diagnosis and treatment is obvious. (38 refs.) - *S. Katz.*

No address

1701 HUDSON, FREDERICK P. Recent developments in the management and prognosis of some inborn errors of metabolism: Phenylketonuria. *Proceedings of the Royal Society of Medicine*, 60(11,I)1152-1155, 1967.

Although questions must still be answered regarding the accuracy of various diagnostic and intelligence tests as well as dietary treatment of PKU, it appears that early detection and phenylalanine dietary restriction (PDR) are the most important factors in avoiding severe MR. Since PDR has been shown to alleviate, if not prevent, MR in PKU patients, many legislative acts have been passed making detection tests mandatory. Because of the questioned accuracy of the tests, as well as the possibility that not all PKU patients may be MR, the true incidence in the population has not been accurately determined. Any positive screening test warrants immediate and complete biochemical investigation, since waiting for signs of MR to develop is incorrect. This rules out the possibility of controlled studies to evaluate the efficacy of PDR. Futhermore, the resultant ...

intellectual development of treated PKU patients must be evaluated in light of the intelligence tests formed and the familial, social, and intellectual environment in which they are raised. While some children as they grew older have had gradual liberalization of their diet without apparent ill effect, it would appear wise to continue PDR throughout life. Also PDR may have to be considered for PKU pregnant women to prevent fetal damage from maternal hyperphenylalanemia even though the current picture in these cases regarding fetal MR is confusing. This has been done successfully in 1 case. (11 refs.) - *E. Gaer.*

Alder Hey Children's Hospital
Liverpool, England

1702 PARTINGTON, MICHAEL. Mental retardation and PKU. *Mental Retardation, (Canadian ARC),* 17(1):25-26, 1967.

Since the discovery of PKU 33 years ago, considerable progress has been made in developing the clinical picture, describing the mode of inheritance, implementing screening programs, and prescribing dietary treatment. However, the incidence of mental retardation in PKU is still open to question. Of 47 children born to 17 untreated, unimpaired phenylketonuric mothers, 13 were normal, 6 had PKU, and 28 were retarded. The incidence of MR from PKU mothers requires extensive study. (1 ref.) - *J. Snodgrass.*

Queen's University
Kingston, Ontario, Canada

1703 FRASER, G. R. Children of phenylketonuric women. *Pediatrics,* 41(1):155, 1968. (Letter)

A proportion of females homozygous for phenylketonuria live normal married lives but give birth to children with poor prognosis due to fetal damage. The cases of 2 women reported by Moody (1933) prior to discovery of phenylketonuria should be added to the increasing data on PKU mothers who have had children with microcephaly, MR, and other defects. (2 refs.) - *J. Snodgrass.*

University of Adelaide
Adelaide, South Australia

1704 REISS, MAX. Neuroendocrinology and psychiatry: A critical assessment of the present status. *International Journal of Neuropsychiatry,* 3(6):441-463, 1967.

Neuro-psycho-endocrinology started in adverse circumstances. Misconceptions arose about the role of endocrine function in human behavior since premature conclusions were based solely on animal experiments. There was early disillusionment about treatment from the endocrine angle. Later on the difficulties of hormone assays in body fluids considerably delayed the development of scientific progress. Progress in our knowledge of neuro-endocrinology and improvements in endocrine investigation methods augurs well for the future development of our knowledge of neuro-psycho-endocrinology and its applicability to human therapy. (103 refs.) - *Journal abstract.*

Willowbrook State School
Staten Island, New York 10314

1705 MONEY, JOHN, LEWIS, VIOLA, EHRHARDT, ANKE A., & DRASH, PHILLIP W. IQ impairment and elevation in endocrine and related cytogenetic disorders. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development.* New York, New York, Grune & Stratton, 1967, Chapter 3, p. 22-27.

A 14-year study of the effects of the endocrinopathies and related cytogenetic anomalies on the intellectual development of 300 children and some adults identifies 3 conditions which may result in impaired intellectual development: congenital hypothyroidism, idiopathic hypercalcemia, and Klinefelter's syndrome. Negligible or transient and reversible intellectual impairment accompanies conditions of postnatal hypothyroidism, thyrotoxicosis, idiopathic hypoparathyroidism, hypopituitary dwarfism, Addison's disease, and Cushing's syndrome. Data on 46 cases of Turner's syndrome indicate (1) that symptoms of this condition in some cases may include a specific visual-constructional disability and a directional-sense deficit and (2) that MR is not characteristic. When IQ data on 70 cases of adrenogenital syndrome and 35 cases of idiopathic premature puberty are compared with normative data, the results support the association of elevated intellectual development with these syndromes. (22 refs.) - *J. K. Wyatt.*

1706 O'BRIEN, M. D., & HARRIS, P. W. R. Cerebral-cortex perfusion-rates in myxoedema. *Lancet*, 1(7553):1170-1172, 1968.

Bilateral regional cerebral-cortex perfusion-rates (CPR) were estimated in 6 patients with myxedema and again after treatment when they were clinically euthyroid. The apparent increase in CPR was not significant, but because there was a significant fall in systemic blood-pressure there was a highly significant reduction in cerebrovascular resistance. Improvements, which were not significant, were observed in a small range of psychometric tests. (25 refs.) - *Journal abstract.*

Radioistopes Laboratory
Guy's Hospital Medical School
London S. E. 1, England

1707 FINK, CHESTER W. Thyrotropin deficiency in a child resulting in secondary growth hormone deficiency. *Pediatrics*, 40(5):881-885, 1967.

Replacement therapy for thyrotropin (TSH) deficiency in a 7-year-old girl resulted in correction of a growth hormone (GH) deficiency. Growth and development were normal until 1 year, then diminished. At age 7 years, height was 97.5 cm, weight 34 lbs, bone age 18 months, PBI 2.0 μg percent, adrenal function normal, urine hydroxyproline 26 mg/M^2/24 hrs; insulin injection (0.1 u/kg) caused sympotomatic hypoglycemia and produced only a slight rise in plasma growth hormone (GH). Treatment with dessicated thyroid for 6 months produced a growth spurt (from 97.5 cm to 105.2 cm), an increase in bone maturation (from 18 months to 36 months), increased urine hydroxyproline, and normal GH response to insulin injection. The association of GH and TSH deficiency is common and may be due in part to dependence of GH on thyroid hormone. If adrenal function is intact, Ss with GH and TSH deficiency deserve a trial of thyroid replacement alone. (16 refs.) - *W. A. Hammill.*

5323 Harry Hines Boulevard
Dallas, Texas 75235

1708 HUNTER, W. M., WOLFSDORF, JACK, FARQUHAR, J. W., & RIGAL, W. M. Screening tests for growth-hormone deficiency in dwarfism. *Lancet*, 2(7529): 1271-1273, 1967.

A fasting screening test which utilizes a radioimmunoassay was successfully used to screen 37 patients with dwarfism for deficiency of human growth hormone (HGH) in their plasma. The patients were between 8 mo and 18 yr old and below the third percentile in height for age. Of the 37 Ss, 30 had detectable HGH in all 3 samples, 2 had detectable HGH in 2 of 3 samples, and 3 had HGH in 1 of 3 samples. The remaining 2 patients did not show HGH on any of the screening tests, on the extended glucose-tolerance tests, or in the insulin test and were considered to have HGH deficiency. The fasting screening test, which used 3 samples from each patient, was therefore accurate in recognizing or excluding HGH deficiency in all 37 patients. Seventeen patients underwent the "rebound rise" screening test, which consisted of evaluation of 2 or 3 samples taken 2 1/2-4 hours after an oral glucose load of 1.4 g/kg. One patients had no detectable HGH in all 3 samples but did respond normally to a subsequent 6-hour glucose tolerance test with HGH. The test would have been correct in 15 patients if only 1 sample had been taken. Therefore, the latter test provides a safe and simple method of detecting HGH for those who secrete the hormone. Only those patients who show no HGH need be tested more thoroughly to confirm the diagnosis. (15 refs.) *R. Froelich.*

Medical Research Council Clinical
Endocrinology Research Unit
University of Edinburgh
Edinburgh, Scotland

1709 DE BARSY, A. M., MOENS, E., & DIERCKX, L. Dwarfism, oligophrenia and degeneration of the elastic tissue in skin and cornea. A new symptom. *Helvetica Paediatrica Acta*, 23(3):305-313, 1968.

A 22-month-old girl with a progeria-like aspect is presented. She has cutis laxa with degenerative changes of the elastic fibers in the skin. The cornea is similarly affected.

In addition, the hitherto undescribed syndrome consists of multiple congenital anomalies, neurological symptoms with mental retardation and shortness of stature. Several laboratory investigations have failed to provide information on the etiology or the physiopathological basis of the condition. (18 refs.) - *Journal summary.*

Fondation Born-Bunge
Filip Williotstraat, 59
Berchem-Antwerp, Belgium

1710 SCHNEIDER, H. J., & ZELLWEGER, H. Forme fruste of the Prader-Willi syndrome (HHHO) and balanced D/E translocation. *Helvetica Paediatrica Acta,* 23(2):128-136, 1968.

Case histories are presented of 2 MR boys who showed the hypogenitalism and amyotonia-like condition encountered in the first phase of the Prader-Willi syndrome. The anomaly is also called the hypotonia-hypomentia-hypogonadism-obesity syndrome (HHHO). Both boys later developed many of the characteristics of the second phase of this syndrome, but the hyperphagia and obesity typical of the second phase did not appear. It is probable that these patients represent forme fruste of HHHO. One of the cases had a balanced D/E translocation. The clinical findings associated with this chromosomal anomaly are presented, and their relationship to HHHO is discussed. (16 refs.) *Edited journal summary.*

University Hospitals
The University of Iowa
Iowa City, Iowa

1711 VAZQUEZ, ANGEL M., & LEE, FRED A. Diastrophic dwarfism. *Journal of Pediatrics,* 72(2):234-242, 1968.

Two children with diastrophic dwarfism demonstrated the typical clinical and roentgenographic features that permit diagnosis of this syndrome to be made at birth. At 4 months of age the 4 1/2-year-old girl was observed as having cleft palate, extremely short extremities, ulnar deviation of hands and fingers, bilateral club feet, deformed ears, inguinal hernias, hypertelorism, cervical kyphosis, and distinctive X-ray changes. Her IQ of 70 may have been partially the result of institutionalization in a non-stimulating environment. The 6-year-old boy was noted at birth to have short extremities, bilateral club feet, and peculiar hematomas of both ears. A stillborn sibling also had short extremities and bilateral club feet. At 6 years of age the S appeared alert and intelligent and had multiple skeletal abnormalities which included short extremities, hyperextensibility, enlarged knees, flexion contractures of the knees and ankles, and mild lumbar scolosis. The differentiation of diastrophic dwarfism from other forms of chondrodysplasia is possible during the first few weeks of life because of the characteristic features: shortness of stature, skeletal deformities present from birth, micromelia, cleft palate, hyperextensibility, and external ear deformities. MR is not a constant feature. The syndrome appears to be caused by an autosomal recessive trait. (11 refs.) - *R. Froelich.*

Martin Army Hospital
Fort Benning, Georgia 31905

1712 DÜRR, D. K. Eine neue Dysostoseform mit Mikromelie bei zwei Geschwistern. (A new form of dysostosis with micromelia in two siblings.) *Helvetica Paediatrica Acta,* 23(2):184-194, 1968.

Two siblings with micromelic dwarfism are described. Although retardation of growth at birth, micromelia and square iliac wings are comparable to the findings seen in achondroplasia, the other characteristical changes of the spine and pelvis are lacking. As the parents are both normal, a recessive type of transmission can be suspected. A similar observation could not be found in the literature. (12 refs.) - *Journal summary.*

No address

1713 PRYOR, HELEN B., & THELANDER, HULDA E. Growth deviations in handicapped children: An anthropometric study. *Clinical Pediatrics,* 6(8):501-512, 1967.

Comparison of the anthropometric measurements of 678 handicapped children with those of 12,000 normal children (CA, 1-15 yrs) revealed deviations from the normals in all

the handicapped Ss except those with a mild neurologic deficit. The children were divided into 4 groups: 146 children with Down's syndrome (83 boys, 63 girls), 258 children with multiple congenital anomalies (145 boys, 113 girls), 179 children with cerebral palsy (87 boys, 90 girls), and 95 children with neurologic deficit or minimal brain damage (50 boys, 45 girls). The 14 measurements taken included: standing height; body weight; cephalic circumference, length, and breadth; facial height and bizygomatic diameter; interpupillary space; ear length, breadth, and displacement; bi-iliac, lateral thoracic, anteroposterior trunk diameters; and sitting height. Results indicated that growth is adversely affected most severely in Ss with Down's syndrome followed by those with multiple congenital anomalies. Least affected groups were those with cerebral palsy from birth injury and those with severe hypoxia after normal gestation. Those with only neurological deficit showed no deviation from normals. (28 refs.) - *W. Asher.*

Stanford University
Palo Alto, California 94304

1714 STĂNESCU, V., FLOREA, I., IONESCU, V., DINULESCU, EL., & STĂNESCU, RITTA. L-proline loading test in growth disturbances. *Helvetica Paediatrica Acta*, 23(2):147-153, 1968.

A L-proline loading test (100 mg/kg body weight/oz) was examined in children with pituitary dwarfism (6 Ss), congenital myxedema (5 Ss), Turner's syndrome (7 Ss), and Cushing's syndrome (4 Ss), comparatively with 5 normal children. The patients with pituitary dwarfism have a significantly higher level of serum proline before and 1/2, 1, 2, 3, and 4 hours after loading. In Cushing's syndrome and in myxedema the basal level of serum proline was not significantly different from that in controls. The 1-, 2-, 3-, and 4-hour values in Cushing's syndrome and the 1/2-, 1-, 2-, 3-, and 4-hour values in myxedema were significantly higher. In patients with Turner's syndrome only the 1-hour value was significantly different from the controls. (35 refs.) *Edited journal summary.*

Institute of Endocrinology
"C. I. Parhon"
Bucharest, Rumania

1715 CASTAN, P. Les fonctions métaboliques de l'astroglie cérébrale, élément fondamental de la barrière hémato-encephalique. (The metabolic functions of the cerebral astroglia, the fundamental element of the blood-brain barrier.) *Journal of the Neurological Sciences*, 6(2):237-248, 1968.

An anatomical and histological study of the astroglia with regards to metabolism and to certain encephalopathies and toxicities was undertaken. Due to its particular structure and location among the blood vessels, neurons, and CSF, the astrocyte is gifted with certain metabolic functions. It nourishes and controls the hydroelectric balance of the neurons, secretes the interstitial fluid, and acts as a buffer for the CSF. The astroglia, which appears spongy in character, is the first element to react in encephalopathies such as hepatolenticular degeneration, hepatic, mercurial, and manganese. Neuronal degeneration is considered to be a secondary effect. The function of an astrocyte has been compared to that of a nephron. (32 refs.) - *S. Katz.*

Departement de Neuropathologie
de la Fondation Born-Bunge
Berchem-Anvers, Belgium

1716 AMERICAN ACADEMY OF PEDIATRICS, COMMITTEE ON NUTRITION. The relation between infantile hypercalcemia and vitamin D--Public health implications in North America. *Pediatrics*, 40(6):1050-1061, 1967.

The availability of vitamin D to pregnant women and children has almost eliminated rickets as a pediatric problem, but excessive intake of the vitamin may produce hypercalcemia with serious sequellae. The mild form of infantile hypercalcemia, which is readily reversible with conservative therapy, consists of azotemia and failure to thrive. The more severe form, which probably has its onset *in utero*, includes a characteristic "elfin" facies, MR, and supravalvular aortic stenosis. This form is associated with a high mortality. The incidence of both forms has decreased since recommended vitamin D allowances were reduced in 1960. No clear differences have been detected in these Ss' ability to absorb or excrete calcium or vitamin D. The recommended daily intake of vitamin D during pregnancy and childhood is 400 I.U. Intake greatly in excess of this amount may cause hypercalcemia with severe complications. (50 refs.) *W. A. Hammill.*

1717 WHITEHEAD, R. G. Biochemical tests in differential diagnosis of protein and calorie deficiencies. *Archives of Disease in Childhood*, 42(225):479-484, 1967.

Serum protein, the amino acid ratio, and the hydroxyproline index were used to differentiate between nutritional marasmus and two types of kwashiorkor. Of the 52 children from the Kampala, Uganda, area who were examined, 16 had marasmus and were younger (13 were less than 1 year old) than the 36 children with kwashiorkor. The marasmic children were more below the weight norm for their age than the children with kwashiorkor ($p<0.001$). The latter were divided into those with pale hair and those with dark hair. The dark-haired children with kwashiorkor more often had malaria and intestinal worms. The amino acid ratio was raised in both kwashiorkor groups but was elevated only slightly in the marasmic group. Serum proteins were nearly normal in the latter group but low in the kwashiorkor groups, particularly in those with dark hair. The dark-haired group had lower levels of hemoglobin but less hypoglycemia than the pale-haired group. The hydroxyproline index was low in the marasmic and the pale-haired kwashiorkor groups but less so in the dark-haired group. The hydroxyproline index rose with successful treatment and correlated with the rate of growth. These children were treated immediately with a milk diet and appropriate supplements after the diagnosis of marasmus or kwashiorkor was made on clinical grounds. (18 refs.) - *R. Froelich.*

Infant Nutrition Research
Division
Dunn Laboratory
Cambridge, England

1718 CHASE, H. PETER, DORSEY, JAMES, & *McKHANN, GUY M. The effect of malnutrition on the synthesis of a myelin lipid. *Pediatrics*, 40(4,I):551-559, 1967.

The hypothesis that the period of active myelin formation is both a crucial and a vulnerable time for the developing CNS was strengthened when rats subjected to nutritional deprivation from birth to 21 days of age had a decreased synthesis of sulfatide which was not corrected by refeeding. Control litters were well nourished with an ad libitum diet. Refeeding for malnourished rats was accomplished by decreasing the size of the litters. The *in vivo* synthesis of sulfatide was followed by measuring of the incorporation of S^{35}-sulfate into sulfatide. After animals were sacrificed, brain lipids including sulfatides were measured. Malnutrition produced a significant decrease of brain weight, brain lipid, and body weight. Refeeding resulted in a rapid gain of body weight but a slower gain of brain weight and lipids. In the control animals sulfatide synthesis increased at 7 days of age and reached a peak at 18 days. In malnourished rats these peaks were less than half that in controls, and there was no significant increase after refeeding. Those animals that were malnourished during the onset of rapid myelin production (8-10 days) did not form sulfatide at the normal rate despite relatively normal brain weight. *In vitro* synthesis of sulfatides was decreased in malnourished animals and a significant difference of galactocerebroside sulfokinase was found ($p=.01$). (15 refs.) *R. Froelich.*

*Department of Pediatrics
Stanford Medical Center
300 Pasteur Drive
Palo Alto, California 94304

1719 GOPALAN, C. Malnutrition in childhood in the tropics. *British Medical Journal*, 4(5579):603-607, 1967.

Malnutrition, the most important cause of ill-health among children in the tropics, is described in terms of clinical manifestations and treatment. Case illustrations are presented. The infant and child mortality rates in tropical countries are so high that a child's life expectancy at age 5 is actually higher than at birth. Maternal malnutrition is a very important factor in producing premature birth and subsequent infant death. Breast feeding usually insures adequate nutrition for the first 6 months of the infant's life. The 2 major clinical forms of protein-calorie malnutrition in the tropics are kwashiorkor and marasmus. Kwashiorkor often occurs between 1 and 3 years of age, with an insidious onset of failure to grow and become involved in the environment. Of the many other manifestations that occur, the most typical are hypoprotienemic edema, hair and skin discoloration, and diarrhea. Marasmus occurs between 6 and 12 months of age and is caused by gross calorie undernutrition. Treatment of both these conditions consists of providing adequate protein and calories. The next most common deficiency disease is vitamin-A deficiency, which can be manifested by night-blindness, Bitot spots, and xerosis of the conjunctiva. Treatment consists of oral vitamin A. Phrynoderma is a follicular hyperkeratosis caused

by a deficiency of essential fatty acids and possibly of vitamin-B complex. (3 refs) *R. Froelich.*

No address

1720 BREWER, TOM. Human pregnancy nutrition: A clinical view. *Obstetrics and Gynecology*, 30(4):605-607, 1967.

The necessity of adequate pregnancy nutrition is discussed and an adequate prenatal diet described. The biochemical basis of nutrition has become a very complex subject with a number of essential nutritional requirements currently recognized. Despite this complexity, the clinical obstetrician must maintain a holistic view toward prenatal nutrition. Each individual nutrient is not a separate entity but instead is involved in complex relationships. The most important concern is to ensure adequate nutrition for each pregnant woman under the care of an obstetrician. An adequate diet consists of a milk group (equivalent to 1 quart of milk), a meat group (2 servings of meat), a vegetable-fruit group (4 servings), and a bread-cereal group (4 servings). This plan provides about 2/3 of the caloric requirements and most of the known vitamin requirements. Iron is the only supplement that has been established as regularly necessary, although other supplements such as folic acid may be necessary for individual patients. When maternal nutrition is adequate, the fetal nutrition is more likely to be adequate and prematurity rates may be lower. Farmers have long recognized that adequate pregnancy nutrition is necessary for optimum reproduction of their livestock. (20 refs.) - *R. Froelich.*

Richmond Health Center
240 8th Street
Richmond, California 94801

1721 KROOTH, ROBERT S. Diploid cell strains from patients with inherited biochemical abnormalities. In: International seminar on medical genetics, August 31-September 3, 1966. *Alabama Journal of Medical Sciences*, 3(4):456-461, 1966.

Tissue culture research using human diploid cells from patients with genetic mutations places a large amount of mutant protein in a controlled environment. Although many phenotypes are not expressed in cell culture some can be altered biochemically. For example, galactosemia strain dies in 100 mg percent galactose medium, and orotic aciduria strain is inhibited by an adenosine medium but stimulated by uridine. Research is directed at changing the cells genetically and elucidating the mechanism of gene action. (9 refs.) - *E. L. Rowan.*

University of Michigan
Medical School
Ann Arbor, Michigan 48104

1722 HANSSON, O. Interpretation of abnormal tryptophan load tests. *Developmental Medicine and Child Neurology*, 9(3):348-350, 1967.

Tryptophan load tests are widely used in detection of pyridoxine deficiency. Abnormal findings in cases with no obvious dietary deficiency of pyridoxine have been interpreted as due to (1) decreased kynureninase activity, which could be caused by functional pyridoxine deficiency, or (2) increased pyrrolase activity. (No refs.) *J. Snodgrass.*

Department of Pediatrics
University Hospital
Uppsala, Sweden

New Growths

1723 FRAUMENI, JOSEPH F., JR., GEISER, CLEMENTINA F., & MANNING, MIRIAM D. Wilms' tumor and congenital hemihypertrophy: Report of five new cases and review of literature. *Pediatrics*, 40(5):886-899, 1967.

Seven of 225 Ss with Wilms' tumor (nephroblastoma) had congenital hemihypertrophy. A total of 26 cases of this association have been reported in the literature. One-fourth of Ss with hemihypertrophy have MR. Common features of these 2 disorders include pigmented nevi, hemangiomas, and congenital genitourinary anomalies such as hypospadias,

cryptorchidism, and hypogonadism. The histopathologic appearance of nephroblastoma suggests an embryonic maldevelopment. Cytogenetic studies were abnormal in 6 of 18 Ss tested. Hemihypertrophy may be of genetic, chromosomal, or environmental origin. The hemihypertrophic kidney may be a pre-neoplastic anlage and may predispose development of nephroblastoma. (59 refs.) - *W. A. Hammill.*

Epidemiology Branch
National Cancer Institute
Bethesda, Maryland 20014

1724 SIMPSON, D. A., *CARTER, R. F., & DUCROU, W. Intracranial tumours in infancy. *Developmental Medicine and Child Neurology*, 10(2):190-199, 1968.

Intracranial tumors may cause symptoms during infancy: 20 cases are reported in which symptoms first appeared during the first 2 years. The clinical symptoms are relatively simple and non-specific. Neoplasms should be remembered as occasional causes of infantile hydrocephalus, vomiting, ataxia and hemiparesis. They may also present as primary cachexia--the diencephalic syndrome. A definite diagnosis is usually established by ventriculography; the volume of gas introduced must be adequate for the particular diagnostic problem to be solved. (18 refs.) - *Journal summary.*

*Pathology Department
Adelaide Children's Hospital
North Adelaide, South Australia

1725 BARSKY, PERCY. Congenital astrocytoma: Definitive diagnosis at 30 days of age, with survival. *Canadian Medical Association Journal*, 98(4):216-217, 1968.

The existence of a congenital, malignant brain tumor in infancy and its definitive diagnosis in a living patient is rare. Beginning at 48 hours of age, an infant, who is now 4 1/2 years old, suffered recurrent convulsions without clinical evidence of increased intracranial pressure. There was no evidence of hydrocephalus, and physical and neurological examinations, skull films, and spinal fluid examinations were within normal limits. An EEG suggested a left hemispheric disturbance confirmed as a space-occupying lesion by pneumoencephalogram. Craniotomy on the thirtieth day of life revealed near the left basal ganglia a mass which on pathologic examination was shown to be "fibrillary astrocytoma, Grade I". Severe hydrocephalus subsequently developed. (11 refs.) *E. L. Rowan.*

1459 Main Street
Winnipeg 4, Manitoba
Canada

1726 HENDERSON, W. R., & GOMEZ, R. DE R. L. Natural history of cerebral angiomas. *British Medical Journal*, 4(5579):571-574, 1967.

The natural history of cerebral angiomas was studied by follow-up evaluation of 70 patients who were seen initially between 1946-1961 and were re-examined in 1966. The first manifestations of the angiomas were hemorrhage (in 53 patients), epileptic fits (in 11), progressive hemiparesis (in 2), and high intracranial pressure (in 2). The age of onset varied from 3-60 years; 21 patients were in their twenties. Five patients died following the first hemorrhage. Hemorrhagic manifestations of medium-sized angiomas were usually mild, but small angiomas in children and large angiomas in older adults were more severe. Eighty-four percent of the patients with hemorrhage survived the next 5 years. Only 2 patients with safely operable angiomas died. Although more fatal hemorrhages will undoubtedly occur in the future among the survivors, a conservative surgical approach is probably justified. Because those patients who will have recurrent hemorrhages cannot be predicted when they are first seen after hemorrhage, angiomas that can be safely excised should be considered for neurosurgical removal. Prompt evacuation of intracerebral hematomas can prevent many deaths. However, angiography is never without risk and may be highly risky in patients with large angiomas or subarachnoid hemorrhage. (16 refs.) *R. Froelich.*

General Infirmary at Leeds
Leeds, England

Unknown Prenatal Influence

1727 GUTHKELCH, A. N. Hydrocephalus--Its diagnosis and treatment in adults and children. *Royal Society of Medicine, Proceedings*, 60(12):1263-1264, 1967.

One-hundred and sixty-one hydrocephaly cases who were treated surgically with the Holter valve were followed for at least 2 years. Results showed that (1) surgical treatment doubles the hydrocephalic child's chance of living to 10 years of age, but there is a continuing need for revision operations; (2) communicating hydrocephalus is easier to treat than the obstructing variety; (3) congenital CNS defects are associated with higher incidence of serious mental defect than is usual with birth injury or prematurity; and (4) post-meningitic cases have a high incidence of epilepsy and aqueduct stenosis. (10 refs.) - *J. Snodgrass.*

Royal Manchester Children's Hospital
Pendlebury, Lancashire, England

1728 HOARE, R. D. Hydrocephalus: Radiological diagnosis in infancy. *Royal Society of Medicine, Proceedings*, 60(12): 1264-1265, 1967.

Radiological investigation is indicated in all cases of infants with rapidly enlarging heads except those with a myelomeningocele. Conditions which may be found by radiology include: subdural effusions, hydranencephaly, bladder brain, abscess, agenesis of the corpus callosum, posterior fossa tumor or hematoma, and choroid plexus papilloma of the lateral ventricle. Differential diagnosis and pathology are also discussed for: toxoplasmosis, Arnold-Chiari malformation, aqueduct stenosis, and Dandy-Walker syndrome. (3 refs.) - *J. Snodgrass.*

Hospital For Sick Children
Great Ormond Street
London, England

1729 WILSON, CHARLES B., & BERTAN, VURAL. Interruption of the anterior choroidal artery in experimental hydrocephalus. *Archives of Neurology*, 17(6):614-619, 1967.

Data on the 23 dogs surviving interruption of the right anterior choroidal artery support the conclusion that ventricular enlargement is the result of transmission of an undampened pulse to the ventricular walls. Of the 23 who lived 4 days or longer, 13 developed mild, moderate, or advanced ventriculomegaly, and 10 had a smaller lateral ventricle on the side of the interrupted anterior choroidal artery. Electrocoagulation was used to surgically interrupt the artery. Control procedures performed on 4 groups of dogs included: (1) an occlusion of the right internal carotid artery proximal to the posterior communicating artery (N=7); (2) exposure but not interruption of the anterior choroidal artery (N=4); (3) opening of the dura after a right temporal craniectomy (N=3); and (4) left temporal craniectomies (N=10). Hydrocephalus was produced by a single intracisternal injection of lampblack. Asymmetrical ventricles were found in 3 dogs of group 1, and 1 dog in group 2. Satisfactory ventricular cerebrospinal fluid pressure recordings that demonstrated equal pressure on both sides were made in 7 of the experimental animals. The pulse amplitude was around 15 mm of water on the left (intact) ventricle; on the right side it was approximately 2 to 8 mm of water less. Data indicated that back pressure from CSF obstruction does not explain the ventricular enlargement of hydrocephalus. (6 refs.) - *R. Froelich.*

Division of Neurosurgery
University of Kentucky
Medical Center
Lexington, Kentucky 40506

1730 CORKERY, J. J., & ZACHARY, R. B. Increased resistance developing in Holter valves. *Lancet*, 2(7530):1331-1333, 1967.

Ventriculoatrial shunt, with a Holter valve, is commonly used in the management of hydrocephalus. In 3 cases clinical evidence of raised intracranial pressure was noted 1, 4, and 9 years after establishment of the shunt. During surgical exploration the resistance of the valve to a column of saline solution 450 mm high was increased. It is suggested that if raised intracranial pressure is confirmed at operation and if cerebrospinal

326-079 O - 68 - 5

fluid flows freely through the catheters, then the resistance of the valve should be checked. (No refs.) - *Journal abstract.*

Children's Hospital
Sheffield 10, England

1731 HOGAN, PATRICK A., & *WOOLSEY, ROBERT M. Polydipsia associated with occult hydrocephalus. *New England Journal of Medicine*, 277(12):639-640, 1967.

A 10-year-old boy presenting with daily bitemporal headaches and staggering gait was hospitalized for 4 months. Study revealed hydrocephalus from a rostral block of the cerebral aqueduct. At age 7, the patient had exhibited polydipsia which subsided over a 2-year period. Apparently this symptom resulted from stimulation of a hypothalmic drinking center by the enlarging third ventricle. Ventriculocisternal shunt relieved the headaches and disturbed gait; the patient has been entirely well for 3 years. (4 refs.) - *J. Snodgrass.*

*St. Louis University School of Medicine
1221 South Grand Boulevard
St. Louis, Missouri 64104

1732 NAGULICH, I., BORNE, G., & GEORGEVICH, Z. Temporal meningocele. *Journal of Neurosurgery*, 27(5):433-440, 1967.

Surgical treatment of temporal meningoceles was successful in 8 children (CA, 23 days to 4 yrs) with large lateral cephalic masses. This mass had a pedicle in 1 S, was covered by normal skin in 2 Ss, throbbed during crying in 2 Ss, and was increasing in size in 3 Ss. None of the cases had increased intracranial pressure. Of the 2 girls who were MR, one presented choreoathetoid movements, microphthalmus, and absent myotatic reflexes. The bony defect was usually not visible on standard X-rays; however, when it was seen, it was located at the pterion. Pneumoencephalography was not a consistent diagnostic technique; gas did not enter the ventricle on the same side of the meningocele and did not enter the meningocele itself. The surgical procedure for all cases consisted of removing the meningocele and restoring the tissue layer by layer. The incision was made in front of and above the ear. A repeat surgical procedure was done in 1 case. The esthetic results were good. In each case the bony opening was situated at the pterion. It appeared that the temporal malformation was related to the development of the posterior part of the first brachial arch and that the bony defect was secondary. (10 refs.) - *R. Froelich.*

Neurosurgical University Hospital
Belgrade, Yugoslavia

1733 COOPER, D. G. W. Urinary tract infection in children with myelomeningocele. *Archives of Disease in Childhood*, 42(225): 521-524, 1967.

Of 415 children with myelomeningocele seen over a 7-year period (1958-1965), 60 percent with spina bifida had urinary tract infection and 30 percent had upper urinary tract dilatation. The latter usually occurred among girls with spinal lesions affecting the thoracic region. One hundred and ninety-five of the Ss were boys and 220 were girls. Although 70 percent (289) are still alive, only 50 percent of those born more than 5 years ago have survived. Only 13 percent were continent. Neurogenic bladder was more common among children with hydrocephalus. The overall incidence of infection was 37 percent, and infection was more common in girls. The level of the spinal lesion appeared to have no relationship to the incidence of urinary tract infection. Thirty-three percent of those infected had dilatation of the upper urinary tract; the dilatation was unilateral in 37 percent, most of whom were girls. The mortality in this group was 25 percent. Death from urinary tract disease was spread equally over the first 5 years of life. Cystographic radiological procedures were done in 55 children in order to determine the presence of reflux. This procedure seems hazardous, however, since 42 percent of those uninfected developed urinary tract infection and since abnormalities not previously known were demonstrated in only 20 percent. Urinary tract infection does not appear to be a major cause of death in the first 5 years of life. (9 refs.) - *R. Froelich.*

Department of Surgery
Queen Mary's Hospital
Carshalton, Surrey, England

1734 KLOEPFER, H. WARNER, PALTOU, RALPH V., & HANSCHE, WESLEY J. Genetics of microcephaly in Louisiana. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development*. New York, New York, Grune & Stratton, 1967, Chapter 14, p. 244-251.

An analysis of 166 cases of true microcephaly recorded from 1938 to 1958 at Charity Hospital (New Orleans, Louisiana) showed that 65 percent of the parents of microcephalics were related, the microcephaly prevalence rate for Caucasians was 7 times higher than the rate for Negroes, and the ratio of genetic to non-genetic types was 29:1. Other population parameters for microcephaly at the hospital and in a 3-parish isolate included a hospital admission ratio of 1:466, an estimated white population prevalence ratio of 1:1700, an estimated incidence ratio of 1:1000, an expected carrier ratio of 1:16, and a ratio of carriers to microcephalics of 62:1. One kindred consisting of 13 sibships in which all parents had an average relationship of second cousin once removed, included 69 siblings of whom 22 were affected. A comparison of differences in mean IQ of a control group of 179 elementary school children residing in the population isolate, 30 parents of microcephalic children, and 45 relatives (except parents) of microcephalics revealed that average heterozygote scores were from 10 to 25 points lower than those of controls. IQ assessment was based on scores from the Lorge-Thorndike Intelligence Tests (nonverbal forms 3, 4, and 5), Stanford-Binet (Form L-M) and the Arthur adaptation of the Leiter International Performance Scale. (14 refs.) *J. K. Wyatt.*

1735 ANDERSEN, S. RY, BRO-RASMUSSEN, F., & TYGSTRUP, I. Anencephaly related to ocular development and malformation. *American Journal of Ophthalmology*, 64(3,II):559-566, 1967.

Postmortem examination of the eyes of 21 infants with varying degrees of anencephaly showed frequent hypoplasia or atrophy of the optic ganglion, the nerve-fiber layer of the retina, and the axons in the optic nerve which was interpreted as secondary changes to the cerebral malformations. The pathological material came from a larger consecutive autopsy collection of central nervous system malformations. The infants were either stillborn (11), lived for a few minutes (2), lived from 1 to 24 hours (5), or lived from 4 to 24 days (3). Forty eyes were studied. The third neuron and optic ganglion of the inner retinal layer was hypoplastic in all cases. Hypoplasia could not be differentiated from atrophy. The first and second neurons and the inner nuclear area were usually normal. The nerve-fiber layer was hypoplastic. Axis cylinders in the retina or optic nerve were absent in 24 eyes and decreased in number in 12 eyes. Retinal dysplasia was seen in 2 cases of corneal dermoids. In the 36 cases in which it was sectioned, the optic disc was severely hypoplastic or atrophic. Coloboma of the optic discs were present in 14 cases, and uveal colobomas were shown in 5 cases. Regardless of the degree of anencephaly, all eyes showed a high degree of sensory epithelial differentiation, and all had optic nerve and retinal primordia. The existence of a relationship between hypoplasia of the optic disc and optic nerve and the degree of anencephaly indicates that normal development of the third neuron depends on the development of the central nervous system. (11 refs.) - *R. Froelich.*

Opthalmic Pathology Laboratory
Rigshopitalet
University of Copenhagen
Copenhagen, Denmark

1736 ARIAS-BERNAL, LUIS, & JONES, HOWARD W. An anencephalic male with XX sex chromosome complement. *American Journal of Obstetrics and Gynecology*, 99(6):877-878, 1967.

Case material is presented on a stillborn anencephalic male with XX chromosome complement. The mother was a 28-year-old Caucasian whose family history and personal health history were noncontributory. Her 3 previous pregnancies had been normal and uncomplicated. The stillborn infant's external genitalia were normal. Karyotype analysis from abdominal skin revealed a 46-XX constitution. (7 refs.) *J. Snodgrass.*

Johns Hopkins University
School of Medicine
Baltimore, Maryland

1737 ZALIS, EDWIN G., & ROBERTS, DONALD C. Ehlers-Danlos syndrome. *Archives of Dermatology*, 96(5):540-544, 1967.

A 22-year-old Negro male with Ehlers-Danlos syndrome had a hypoplastic kidney, bladder diverticulum, and diaphragmatic hernia. He presented with hematuria and dysuria, and further examination demonstrated the urological abnormalities. While the bladder diverticulum was being repaired surgically, a marked "hyperelasticity" of the subcutaneous tissues and the bladder submucosa was found. During childhood the S bruised easily, had "rubbery skin," and showed considerable scarring when traumatized. Ehlers-Danlos syndrome was diagnosed at age 7. He developed a strangulated diaphragmatic hernia which was surgically repaired. The bladder diverticulum and the diaphragmatic hernia occurring with Ehlers-Danlos syndrome can in all probability be attributed to congenital weakness or laxity of supporting tissues. This is the first known documented case of Ehlers-Danlos syndrome with hypoplastic kidney. The incidence of internal manifestations in Ehlers-Danlos syndrome is probably higher than reported. Of the 150 cases with this syndrome, 3 have had diaphragmatic hernia and 2 have had a bladder diverticulum. (11 refs.) - *R. Froelich.*

UCLA School of Medicine
Los Angeles, California 90024

1738 WITTWER, B., & GIESSMANN, H. G. Orofacial-digital syndrome. *Lancet*, 2 (7515):559, 1967. (Letter)

A female infant (birth weight, 6 lb 10 oz) born following a normal 40-week pregnancy showed characteristics of an orofacial-digital syndrome. Symptoms included convergent strabismus, retrognathia, bilateral hypoplastic zygomas, antimongoloid eye position, low-set ears, hypertelorism, hyperdontia, macrostomia, and several other deformities including simple syndactyly of the left hand. The S had a normal female idiogram (XX); abnormal dermatoglyphic findings were characteristic. (No refs.) - *J. Snodgrass.*

Ophthalmological Hospital
Medical Academy of Magdeburg
German Democratic Republic

1739 SIZONENKO, P.-C., JOB, J.-C., SEBOUK, S., & ROSSIER, A. Gigantisme cerebral de l'enfant dosage de l'hormone de croissance dans le plasma. (Cerebral gigantism in the child and determination of growth hormone in the plasma). *Archives Francaises de Pediatrie*, 25(2):151-161, 1968.

The cases of 6 children (4 boys and 2 girls; CA, 1-6 yr) with cerebral gigantism are reported. The most outstanding features were abnormal cranial-facial development and retarded psychomotor development. MR was present in 4 children. The study Ss did not show increased secretion of the pituitary gland. In 4 of the patients normal growth-hormone values were found after hypoglycemic insulin stimulation and arginine administration. The other 2 Ss showed slightly above normal values for this test. (23 refs.) *S. Katz.*

Hôpital Saint-Vincent-de-Paul
74, av. Denfert-Rochereau
Paris 14e, France

Unknown or Psychogenic Cause with Reaction Manifest

1740 PERCY, ALAN K., & BRADY, ROSCOE O. Metachromatic leukodystrophy: Diagnosis with samples of venous blood. *Science*, 161(3841):594-595, 1968.

Arylsulfatase A and B have been demonstrated in preparations of human leukocytes. The level of activity of arylsulfatase A is markedly decreased in the preparations from patients with metachromatic leukodystrophy. Acid phosphatase and arylsulfatase B activities were normal. The assay of arylsulfatase A in leukocyte preparations can be useful in the diagnosis of metachromatic leukodystrophy while obviating the difficulties of current methods. (10 refs.) *Journal abstract.*

National Institute of Neurological Diseases and Blindness
National Institutes of Health
Bethesda, Maryland 20014

1741 DAYAN, A. D. Peripheral neuropathy of metachromatic leucodystrophy: Observations on segmental demyelination and remyelination and the intracellular distribution of sulphatide. *Journal of Neurology, Neurosurgery, and Psychiatry*, 30(4):311-318, 1967.

Histological examination of the peripheral nerves of a 15-year-old girl dying of metachromatic leucodystrophy (MLD) demonstrated segmental demyelination and remyelination and no correlation between the presence of metachromatic granules from Schwann cells and disease of its myelin segment. These findings support the hypothesis that the enzyme defect in MLD acts at 2 sites in the nervous system, and the damaged cellular organelles may be of more pathological significance than the sulphatide accumulation in myelin. The patient had appeared normal until 10 years of age, when she became clumsy and her schoolwork deteriorated. At age 13 she was definitely MR and spastic. By 15 years of age she was stuporous and died of respiratory infection. At necropsy, peripheral nerves were fixed in formalin, stained by osmic acid, and teased out freehand from fascicles. Frozen sections were stained to show metachromasia. About 100 nerve fibers, when separated, consisted of both sensory and motor nerves. Similar changes were observed in both types of nerves. The pathology appeared similar to that of other Schwann cell diseases. The lack of generalized metachromatic staining implies that there is not a demonstrable excess of sulphatides in the myelin sheath. The presence of remyelination indicates the production of new myelin sheaths by the Schwann cell. (32 refs.) - *R. Froelich.*

Department of Pathology
General Hospital
Southampton, England

1742 CUTLER, ROBERT W. P., WATTERS, GORDON V., HAMMERSTAD, JOHN P., & MERLER, EZIO. Origin of cerebrospinal fluid gamma-globulin in subacute sclerosing leukoencephalitis. *Archives of Neurology*, 17(6):620-628, 1967.

Support for the conclusion that gamma G globulin (IgG) is formed by CNS cells in subacute sclerosing leukoencephalitis (SSLE) was provided when the exchange of IgG labeled with radioactive iodine (^{125}I) between the serum and cerebrospinal fluid (CSF) was measured in 2 patients with subacute SSLE and in 3 controls. The control Ss were 2 children (CA, 5 and 9 years) with pontine masses and a 24-year-old MR woman with epilepsy, quadriparesis, and hypotonia. Diagnosis of the patients with SSLE (CA, 5 and 10 years) had been confirmed by brain biopsy. A dynamic equilibrium of IgG between serum and CSF occurred in each patient after intravenous ^{125}I IgG. In the SSLE patients maximum CSF specific activity was only a fraction of serum activity. In the control Ss maximum CSF specific activity occurred when CSF and serum activities were about equal. It appeared that a significant part of the CSF IgG originated from an unlabeled pool. In the SSLE patients 13 and 32 percent of the CSF gamma globulin was derived from the serum. Ventriculolumbar perfusion of chemotherapeutic agents (methotrexate and IUDR) in the SSLE patients resulted in approximately 200 mg/day of IgG movement into the CSF from an extravascular source. Qualitative differences between serum and CSF IgG were found in the SSLE patients. The importance of IgG synthesis in the brain of patients with SSLE is not known. (24 refs.) *R. Froelich.*

Children's Hospital Medical Center
300 Longwood Avenue
Boston, Massachusetts 02115

1743 CLAYTON, BARBARA E., DOBBS, R. H., & PATRICK, A. D. Leigh's subacute necrotizing encephalopathy: Clinical and biochemical study, with special reference to therapy with lipoate. *Archives of Disease in Childhood*, 42(225):467-478, 1967.

Of the 3 siblings with subacute necrotizing encephalomyelopathy described, 2 showed hyperpyruvemia and 1 responded favorably to a clinical trial of lipoate administration. The family consisted of 4 children. The ages of the affected children at time of onset of symptoms were 7 months, 11 months, and 10 months. Case 1 was a male who developed a marked kyphosis, vomiting, convulsions, hypotonia, pyrexia, wasting, and dehydration. He died at age 3 years, 7 months. Case 2 was a female who followed a similar course. Case 3 was a female who began with a similar course but at the age of 2 years, 4 months was treated with lipoic acid and

vitamin B_{12}. After 3 months of this treatment no improvement was noted, and the vitamin B_{12} injections were discontinued. After 1 month on lipoic acid alone, she began to improve clinically, showing increased strength and a positive change in her personality. She progressed for 1 year when she again began to deteriorate. After a change in dosage of lipoate injections she again improved to the point where she was bowel trained and cheerful, but at the age of 6-1/2 years she suddenly deteriorated and died. An autosomal recessive mode of inheritance was suggested by the familial incidence. The presence of hyperpyruvemia in a child with a suggestive history of a degenerative CNS condition should be presumptive evidence for this diagnosis. Since treatment with lipoate did reduce the hyperpyruvemia, it would be valuable to investigate the effects of treatment at an earlier stage of the disease. (43 refs.)
R. Froelich.

Queen Elizabeth Hospital
Hackney Road
London, E. 2, England

1744 PROCOPIS, PETER G., TURNER, BRIAN, & SELBY, GEORGE. Subacute necrotizing encephalopathy in an acidotic child. *Journal of Neurology, Neurosurgery, and Psychiatry*, 30(4):349-353, 1967.

The case of a 4-year-old boy with subacute necrotizing encephalopathy associated with acidosis supports the previously reported association of this type of encephalopathy with acidosis. The child developed intermittent attacks of vomiting and failure to thrive between 1 1/2 and 2 years of age. He developed a slightly ataxic gait and had an elevated cerebrospinal fluid (CSF) protein of 100 mg/100 ml. Although the intermittent episodes stopped at about 2 years of age, the ataxia progressed and he could no longer walk unaided. During a respiratory infection he developed laboratory evidence of acidosis. He became more retarded and hypotonic and died during a respiratory infection when he was nearly 4 years of age. Histological examination of the brain demonstrated infantile subacute necrotizing encephalopathy. An unusual clinical aspect of this case was a consistently present tachycardia. The persistent metabolic acidosis during the last 6 months was associated with hyperventilation. Although the nature of the relationship between the acidosis and the neuropathology remains undetermined, 1 possible explanation is the presence of an inborn error of metabolism with an excess of lactate. Another possibility is central neurogenic hyperventilation. (8 refs.) - *R. Froelich.*

Oliver Latham Laboratory
Psychiatric Centre
North Ryde, Australia

1745 MARTIN, L., MARTIN, J. J., GUAZZI, G. C., LOWENTHAL, A., & MANIEWSKI, J. Dégénérescence tapéto-rétinienne, surdité, myoclonies, démence, épilepsie avec présence d'acide ∝-amino-*n*-butyrique en excès. (Tapeto-retinal degeneration, deafness, myoclonus, dementia, epilepsy, and excessive ∝-amino-*n*-butyric acid). *Journal of the Neurological Sciences*, 6(2):217-236, 1968.

An MR boy with optical and auditory impairment developed myoclonic epileptic seizures at the age of 10 years and subsequently lost his sight and hearing. A tapeto-retinal degeneration with pigmentary changes was found in the ocular fundus. Urine, serum, and CSF analyses showed an excess of ∝-amino-*n*-butyric, which also appeared in cortical tissue. Initial hypotonicity was followed by spasticity with hyperreflexia. MR progressed into dementia. The child died 3 1/2 years after the onset of the epileptic attacks. Autopsy revealed: (1) renal tubular degeneration; (2) leptomeningeal angiomatosis, which was most severe in the occipital region; (3) necrosis and necrobiosis of temporal and occipital cortex with diffuse anoxic changes; (4) abnormal appearance of myelin in the central and peripheral nervous systems, indicative of sudanophilic leukodystrophy; and (5) total degeneration of optic and central auditory pathways. No such case has been previously reported. (15 refs.) - *S. Katz.*

Departements de Neuropathologie
et de Biochimie
Fondation Born-Bunge
Berchem-Anvers, Belgium

1746 O'DOHERTY, N. J., & NORMAN, R. M. Incontinentia pigmenti (Bloch-Sulzberger syndrome) with cerebral malformation. *Developmental Medicine and Child Neurology*, 10(2):168-174, 1968.

The clinical features of 2 female infants with incontinentia pigmenti and evidence of neurological abnormality are described. In

l infant a neuropathological examination revealed a prenatal malformation of the cerebral cortex (micropolygyria) and unilateral pyramidal hypoplasia. There were also signs of a destructive process which had occurred later in development and which was characterized by some small cavities in the central white matter, sclerotic atrophy of a few cerebral gyri and patchy foci of of neuronal loss in the cerebellum. (16 refs.) - *Journal summary.*

Pediatric Department
Guy's Hospital
London, S. E. 1, England

1747 GOTOFF, SAMUEL P., AMIRMOKRI, EBRAHIM, & LIEBNER, EDWIN J. Ataxia telangiectasia. *American Journal of Diseases of Children,* 114(6):617-625, 1967.

A 10 1/2-year-old boy with ataxia telangiectasia who developed an untoward fatal response to radiation therapy for a palatal lymphosarcoma was found to have typical lesions of tuberous sclerosis in the brain. At 1 year of age the S had developed progressive difficulty in coordination; the diagnosis of ataxia telangiectasia was made at age 8. When he developed lymphosarcoma in the oral cavity, radiotherapy (3,000 rads) was administered to the tumor site, after which a severe dermatitis and deep tissue necrosis developed. He was unable to eat and was given a gastrostomy. Eight months after radiotherapy he died from pneumonitis. Although the patient had typical neurological and vascular manifestations of ataxia telangiectasia, he did not have the usual problem of recurrent sinopulmonary infections until the terminal episode. The serum immunoglobulin A and M levels were increased, and circulating lymphocytes were almost persistently decreased. An inguinal lymph node biopsy before radiotherapy showed depletion of lymphoid tissue. The association of tuberous sclerosis and ataxia telangiectasia has not been reported previously, although a propensity for neoplasia has been found in both disorders. Since viral-induced tumors in thymectomized mice appear to be related to the thymus and lymphoid system, the same relationship may account for the development of malignancies in these patients. (35 refs.) - *R. Froelich.*

840 South Wood Street
Chicago, Illinois 60612

1748 EIDELMAN, SAMUEL, & DAVIS, S. D. Immunoglobulin content of intestinal mucosal plasma-cells in ataxia telangiectasia. *Lancet,* 1(7548):884-886, 1968.

The immunoglobulin content of intestinal plasma-cells, serum-immunoglobulin concentrations, and some aspects of immunological function were studied in 6 children with ataxia telangiectasia and 17 MR, immunologically normal children of similar age. All the children with ataxia telangiectasia had very low serum concentrations of immunoglobulin A, and a reversal of the normal ratio between immunoglobulin A and immunoglobulin M containing plasma-cells in the rectal mucosa. (23 refs.) - *Journal abstract.*

Department of Medicine
University of Washington
School of Medicine
Seattle, Washington 98105

1749 HANICKI, Z., HANICKA, MAGDALENA, & REMBIESOWA, HALINA. Immunologic aspects of ataxia-telangiectasia. *International Archives of Allergy and Applied Immunology,* 32(5):436-452, 1967.

Case histories of 2 siblings with ataxia-telangiectasia (A-T) demonstrate immunological abnormalities consisting of panhypogammaglobulinemia in 1 case and paradoxical findings of normal or increased gamma-globulins along with severe immunologic impairment in the other case. Recent reports show that A-T, in addition to its characteristic neurological and vascular manifestations, is often accompanied by immunologic deficiencies as well as by recurrent respiratory tract infections (85 percent of cases) and lympho-reticular malignancies. The cases presented are characterized by low agglutinin and antitoxin titers, depressed delayed hypersensitivity, delayed rejection of skin homografts, apparent aplastic or hypoplastic thymus glands, and elevated leukocyte alkaline phosphatase. A third sibling had Down's syndrome. Photographs, radiographs, detailed immunologic and serologic test results, and a family pedigree are included. (43 refs.) *D. Martin.*

Wyspianski Street 11
Krakow, Poland

1750 YEUNG, C. Y., & HOBBS, J. R. Serum-gamma-G-globulin levels in normal, premature, post-mature, and "small-for-dates" newborn babies. *Lancet*, 1(7553): 1167-1170, 1968.

Two standard deviation log-normal ranges of serum-gamma-G-globulin levels have been established for 182 babies of normal weight for gestational ages from 24-40 weeks. Thirty-four babies of multiple pregnancy had normal gamma-G levels for their gestation; 28 "small-for-dates" and 12 post-mature babies had significantly lower gamma-G levels, which may account for some of their increased death-rate, a major cause of which is pneumonia. The finding of low serum-gamma-G-globulin level in a small baby may thus be an indication for prophylactic gamma-globulin treatment. (13 refs.) *Journal abstract.*

Institute of Child Health
Hammersmith Hospital
London W. 12, England

1751 GORDON, HARRY H. Some biological aspects of premature birth. In: Askin, John A., Cooke, Robert E., & Haller, J. Alex, Jr., eds. *A Symposium on the Child.* Baltimore, Maryland, Johns Hopkins Press, 1967, Chapter 16, p. 233-253.

Although some of the intellectual, sensory, and motor deficits, and the behavioral problems found in the prematurely born child are definitely associated with perinatal damage or congenital cerebral malformations, it is also possible that these disorders are conditioned by less specific factors associated with the premature infant's response to the unclothed, closely regulated environment of an isolette. There is a striking disparity between nursery practices such as prepared childbirth, rooming-in, and self-regulation of breast or bottle feeding, all of which are considered to make a favorable contribution to the personality development of the full-term infant, and the mother-child separation practices and rigid feeding schedules deemed necessary for the physical survival of the premature infant. The use of rigidly scheduled feeding at 3-hour intervals for premature infants is questioned by data on self-regulated feeding for 20 thriving premature infants; the data revealed mean intake variations of from 85 to 150 calories/kg/day, mean daily intake variations on individual days from 50 to 200 calories, an average of 5 or 6 feedings/day with a range of 3 to 7 feedings, and markedly varied between-feeding intervals. Advances in the behavioral sciences, psychopharmacology, electrophysiology, and biochemistry evidence the critical nature of postnatal periods. Additional evidence is needed to document the contribution of nursery practices to aberrant behavioral development in premature infants. (76 refs.) - *J. K. Wyatt.*

1752 NAYLOR, ALFRED F., & MYRIANTHOPOULOS, NTINOS C. The relation of ethnic and selected socio-economic factors to human birth-weight. *Annals of Human Genetics*, 31(1):71-83, 1967.

Data from the Collaborative Study on Cerebral Palsy, MR, and Other Neurological and Sensory Disorders of Infancy and Childhood were used to determine relationships of ethnic and selected socioeconomic factors to human birth weight. Although a highly significant regression of birth weight was shown on many socioeconomic variables, there was very little that would account for the variance in birth weight. Of the approximately 60,000 pregnant women followed for 7 years from the first months of pregnancy, 49 percent were Negro, 42 percent white, and 8 percent Puerto Rican; the remainder were from a variety of ethnic groups. A preliminary chi square analysis of 18,000 single live born outcomes shows significant heterogeneity for such factors as income, housing, density, occupation and education of mother and father, religious affiliation, marital status, presence of husband, and birthplace of gravida. Much of the heterogeneity disappears when the analysis is run within the 3 major ethnic groups. Multiple regression and covariance analyses of 20,000 births show that the socioeconomic birth weight relationships differ among the 3 ethnic groups. Foreign or rural birth of the mother, presence of the husband in the household, and low density (number of persons per room) have a positive effect on birth weight in all 3 ethnic groups. The possibility that white infants are inherently heavier than Negroes is not removed by this study. The complexity of effect of race precludes a single explanation for these findings at this time. (25 refs.) *R. Froelich.*

National Institute of Neurological Diseases and Blindness
National Institutes of Health
Bethesda, Maryland 20014

1753 ROSENZWEIG, MARK R., BENNETT, EDWARD L., & DIAMOND, MARIAN C. Effects of differential environments on brain anatomy and brain chemistry. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development*. New York, New York, Grune & Stratton, 1967, Chapter 5, p. 45-56.

Significant changes in the anatomy and chemistry of the brain were brought about in newly weaned rat puppies when differential environmental experiences of either enrichment or impoverishment were provided for periods of approximately 80 days. Comparison of enriched-experience animals with litter mates exposed to an impoverished environment revealed that the enriched rats had developed significantly heavier cerebral cortices, had greater cerebral activities of acetylcholinesterase and cholinesterase, and had developed greater depth of cortex and larger numbers of glial cells. Significant differences in environmental effects were apparent both between the cortex and the rest of the brain and among the 4 cortical regions. After a period of 30 days of differential experience, the enriched-environment rats were significantly better at problem-solving than the impoverished-experience animals. Significant correlations were also found between cerebral measures and individual differences in problem-solving ability. There is evidence that the brain of the rat retains plasticity for a long period of time and that the cerebral effects of one environment could be reversed by placing the animal in the opposite environment. This occurred even when 105-day-old rats were assigned to a differential environment. Future research should explore the effects of environmental enrichment and deprivation in higher animals and in man in order to identify the relationship between the anatomy and the chemistry of the brain in both normal and retarded intelligence. (4 refs.) - *J. K. Wyatt.*

1754 GUZE, SAMUEL B., & DAENGSURISRI, SOMPONG. Organic brain syndromes. Prognostic significance in general medical patients. *Archives of General Psychiatry*, 17(3):365-366, 1967.

The mortality rate during index admission was much greater for 262 patients with a diagnosis of organic brain syndrome than for 967 matched controls. All patients seen in psychiatric consultation and given a diagnosis of organic brain syndrome at Barnes Hospital over an 8-year period were considered. For each index case about 4 controls from the hospital records were matched for date of discharge, race, sex, ward status, age, and primary medical diagnosis. Ten index cases subsequently were excluded, 9 because of missing records and 1 because of unusual medical diagnosis. Of the 967 controls, 415 were completely matched. The mean age was 57.65 years for the index cases and 56.75 years for the controls. That there were 30 deaths among the index cases (11.43 percent) and 56 deaths among the 967 controls (5.79 percent) was statistically significant ($p<0.01$). When only the completely matched controls were used, the differences remained significant. Although the reasons for obtaining psychiatric consultation varied, it appeared that many patients had created a disturbance in the ward. Therefore, the cases being evaluated may have constituted a severely affected sample of patients with organic brain syndrome. (1 ref.)
R. Froelich.

4940 Audubon Avenue
St. Louis, Missouri 63110

1755 RUTTER, MICHAEL, & LOCKYER, LINDA. A five to fifteen year follow-up study of infantile psychosis: I. Description of sample. *British Journal of Psychiatry*, 113(504):1169-1182, 1967.

For purposes of comparison with other studies, detailed descriptions of 63 children with infantile psychosis were compiled in a 5-to 15-year follow-up conducted at the Maudsley Hospital (London, England). All were first seen before pubescence and were given a diagnosis of either child psychosis, schizophrenic syndrome of childhood, infantile autism, or any agreed-upon synonyms for these disorders. These psychotic patients were compared to non-psychotic patients matched for age, sex, and IQ. Twelve children were very likely "brain damaged," and 33 had IQs below 60; the latter were more likely to show stereotyped behavior, speech retardation, hyperkinesis, and self injury. There was no IQ relationship for autism, physical withdrawal, pronominal reversal, echolalia, profound lack of response to sounds, hypokinesis, and compulsive phenomena. There was a marked preponderance of boys among the psychotic group (4.25:1). Although in most cases psychotic development had been evident from early infancy, about 1/5 of the cases appeared to have had 2 or 3 years of normal development before signs of

psychosis. The patients were similar to those children described by Kanner as having infantile autism. A significant number of children were from professional backgrounds, and there was an excess of first-born children. The rate of psychosis in sibs was no more than 2.4 percent. (41 refs.) *R. Froelich.*

Institute of Psychiatry
Maudsley Hospital
London, S. E.5, England

Convulsive Disorders

1756 Status epilepticus: A medical emergency. *British Medical Journal*, 3 (5557):63-64, 1967.

The high mortality from status epilepticus, which is defined as the occurrence of grand mal seizures without recovery of consciousness between, can be reduced by early treatment including: control of the seizures, maintenance of an adequate airway, and maintenance of the physiological balance. If the routine anticonvulsants in increased dosage do not bring the seizures under control, IM or IV paraldehyde in glucose saline or plasma drip is indicated. Adequate treatment is imperative, for there is evidence that mental and neurological deficits can result from status epilepticus. (2 refs.) *J. Snodgrass.*

1757 HOROWITZ, M. J., & COHEN, F. M. Temporal lobe epilepsy: Effect of lobectomy on psychosocial functioning. *Epilepsia*, 9(1):23-41, 1968.

In follow-up examinations 1 to 7 years after anterior temporal lobectomy for intractable temporal lobe epilepsy, 17 patients were rated in terms of global improvement. An ordinal rank order of improvement was developed on the basis of complex clinical judgment using seizure relief and surgical side effects (case history), memory ability (Babcock sentence and short story memory test), existing psychopathology (psychiatric examination), and psychosocial adaptation (composite rating scales) as variables in a patient-to-patient comparison. In retrospect 9 patients showed satisfactory global improvement and 7 Ss demonstrated deterioration or no improvement (1 was borderline) despite some allevaiation of symptoms. Basic typologies found useful in terms of patient differentiation include: (1) patients with adequate personalities who compartmentalized their seizures, (2) Ss with a preoperative retarded rate of development secondary to epilepsy, (3) those who had inadequate personalities with superimposed epilepsy, (4) those with inadequate personality secondary to epilepsy, (5) those who had developed epilepsy late in life with organic impairment, and (6) patients who exhibited decompensation and stress following surgery. Patients in the first 3 groups improved after surgery, but those in the last 3 categories showed no improvement or deteriorated. (23 refs.) - *E. L. Rowan.*

San Francisco Medical Center
University of California
San Francisco, California 74122

1758 BLAKEMORE, C. B., & FALCONER, MURRAY A. Long-term effects of anterior temporal lobectomy on certain cognitive functions. *Journal of Neurology, Neurosurgery, and Psychiatry*, 30(4):364-367, 1967.

Follow-up study of 86 patients subjected to partial anterior temporal lobectomy for epilepsy showed that removal of the dominant temporal lobe resulted in an auditory verbal learning deficit that was gradually recovered over a 3-year period. Fifty-four of the Ss had a left temporal lobectomy and 32 had a right one. Whenever possible, follow-up examinations were done at yearly intervals for at least a 10-year period. Wechsler intelligence scales showed a decreased verbal IQ in the left hemisphere group and a

decreased performance IQ in the right hemisphere group immediately after the operation, but sub-scale scores were back to pre-operative levels within 1 year after surgery. Learning was measured by an auditory verbal paired-associated learning task. Most patients with the left temporal lobectomy had a markedly impaired ability to learn which did not improve for 2 to 3 years. An analysis of variance for recall and recognition was highly significant ($P=<0.001$). By the fifth post-operative year this learning ability had returned to normal. The speed of recovery correlated significantly with the age at the time of operation ($P=<0.001$) and with the change in seizure frequency ($P=<0.001$). These findings demonstrate that a cognitive deficit present for a year after surgery is not necessarily permanent. (9 refs.) - *R. Froelich.*

Guy's-Maudsley Neurosurgical
Unit
Maudsley Hospital
London, England

1759 HAGBERG, BENGT. The chlordiazepoxide HCl (Librium) analogue nitrazepam (Mogadon) in the treatment of epilepsy in children. *Developmental Medicine and Child Neurology*, 10(3):302-308, 1968.

The chlordiazepoxide analogue nitrazepam was tried in 35 patients with resistant forms of minor epileptic fits. The doses used usually varied between 0.4 and 1.0 mg/kg body-weight/day. Three of 10 patients with infantile spasms became free from fits, all previously treated with ACTH without any effect. Four patients improved by 50 percent and the rest only very transiently. Excellent effects were obtained in 3 patients with akinetic seizures and in 1 boy with myoclonic fits. Three children with petit mal of the genuine type did not improve at all, while 2 girls with the myloclonic form were markedly benefited. Excellent results were noted in 5 of 15 children with psychomotor epilepsy, moderate or transient results in 5, and no favorable response in the remaining 5. The side-effects included drowsiness, ataxia, and the provocation of grand mal, the latter occurring in 6 cases. Four children developed rattling breathing with marked bronchial hypersecretion. In a further 2 patients copious hypersalivation was observed, 1 of whom also had increased lacrimation. A pronounced increase in appetite and weight was noted in 6 children. (12 refs.) - *Journal summary.*

Department of Pediatrics
University Hospital
Uppsala, Sweden

1760 FENICHEL, GERALD M. The use of diazepam in the treatment of status epilepticus. *Clinical Proceedings of Children's Hospital of the District of Columbia*, 24(3):82-85, 1968.

Up to 5 mg of diazepam (Valium) injected intravenously is recommended as the treatment for status epilepticus in children. Slow injection, continued until the seizure stopped, was effective in doses of 1 to 2 mg in infants, and this titration was felt to be safer than an intramuscular injection. No side effects such as respiratory depression or altered states of consciousness occurred. Used prophylactically, diazepam produced an excellent immediate response, but control was usually lost within 3 months. (14 refs.) *E. L. Rowan.*

Children's Hospital
2125 Thirteenth Street N.W.
Washington, D. C. 20009

1761 KOPELOFF, LENORE M., & CHUSID, JOSEPH G. Diazepam as anticonvulsant in epileptic and normal monkeys. *International Journal of Neuropsychiatry*, 3(6): 469-471, 1967.

Intravenous diazepam prevented clinical and EEG convulsant effects of intramuscular Metrazol in epileptic and normal monkeys. Intravenous diazepam is considered to be comparatively more effective as an anticonvulsant than intravenous chlordiazepoxide tested similarly. Intravenous diazepam deserves further trial and study in the treatment of convulsive disorders. (9 refs.) *Journal abstract.*

St. Vincent's Hospital and
Medical Center
New York, New York 10011

1762 HANSEN, J. MØLHOLM, KRISTENSEN, M., & SKOVSTED, L. Sulthiame (Ospolot) as inhibitor of diphenylhydantoin metabolism. *Epilepsia*, 9(1):17-22, 1968.

The addition of sulthiamine causes an increase in the level of circulating diphenylhydantoin (DPH) and a prolongation of its half-life. When sulthiamine in doses of 200 to 800 mg was given to epileptics controlled on 300 mg DPH/day, the serum DPH was found to rise after 8 to 14 days of combined treatment from 9 to 14 μg/ml (85 to 175 percent). There was no correlation with dosage of sulthiamine, and the DPH level in 1 patient remained elevated for 4 weeks after its discontinuation. Radioactive half-life of DPH was increased from 3 to 23 hours after the same time lag in 4 other patients. Inhibition of the metabolism of DPH in the liver was postulated as the mechanism of action of sulthiamine. (15 refs.) - *E. L. Rowan.*

Medical Department F
Gentofte Hospital
Copenhagen, Denmark

1763 GLASER, GILBERT H. Limbic epilepsy in childhood. *Journal of Nervous and Mental Disease*, 144(5):391-397, 1967.

The relationship between developmental patterns and limbic epilepsy is examined by means of clinical and EEG studies on 68 boys and 52 girls (CA, 1 1/2-16 yr) with complex seizure patterns that could be differentiated from behavior disorders. Intellectual deficit was found in 30 of 67 cases tested. Significant etiological factors were present in 62; perinatal anoxia and central nervous infection were the most common causes. Twenty-two different seizure manifestations were tabulated for 2 age groups. The most common were altered consciousness; changed position of trunk or limbs; integrated but confused activity; dazed, "dreamy expression," and an aura. Interseizure manifestations included excitability, irritability, hyperactivity, compulsiveness, stubborness, memory disorders, language problems, speech disorders, and aggressive behavior. MR tended to be present in children with chronic, severe seizures. EEGs were significantly abnormal in 107 cases. Seventy-five children achieved seizure control with diphenylhydantoin given in combination with either primidone or phenobarbital. Limbic epilepsy is differentiated from other types by specific involvement of structures of the limbic system. (27 refs.) - *R. Froelich.*

Section of Neurology
Yale University School of Medicine
New Haven, Connecticut 06510

1764 PLUM, FRED, POSNER, JEROME B., & TROY, BART. Cerebral metabolic and circulatory responses to induced convulsions in animals. *Archives of Neurology*, 18(1): 1-13, 1968.

Convulsions induced in dogs and cats by means of drugs and electric stimulation produced marked changes in systemic and cerebral hemodynamics and oxygen consumption. Eighteen dogs and 4 monkeys were anesthetized and paralyzed with gallamine; they then were given pentylenetetrazol (0.5-1.0 gm) intravenously or were stimulated with 170 volts to the scalp for 1 second. Continuous monitoring or intermittent sampling of EEG, central venous outflow, venous and arterial oxygen and carbon dioxide tension, systemic blood pressure, pH, and lactate was performed. There was a 60-percent increase in cerebral oxygen uptake, cerebral blood flow increased 264 percent, and systemic blood pressure rose 78 mm Hg. Venous oxygen tension also increased. Artificial alteration in systemic blood pressure caused proportional alterations in cerebral blood flow. Convulsions increase cerebral metabolism and cause cessation of the normal autoregulatory mechanisms. This allows passive increase in cerebral blood flow in excess of demand because of the increase in systemic blood pressure. (24 refs.) - *W. A. Hammill.*

525 East 68th Street
New York, New York 10021

1765 GÖTZE, W., KUBICKI, ST.,M. MUNTER, & TEICHMANN, J. Effect of physical exercise on seizure threshold. *Diseases of the Nervous System*, 28(10):664-667, 1967.

Recordings made by a 2-channel telemetric EEG showed that exercise tended to normalize EEG abnormalities in 30 adolescents with epilepsy. Thirteen of the Ss had spike-and-wave seizure discharges and there were 2

with focal slow activity. All Ss were hyperventilated and then instructed to do 20-50 deep knee-bends to the point of exhaustion. After 10 to 15 seconds they were hyperventilated again. The first hyperventilation produced an increase in EEG abnormalities in all Ss, while exercise produced a decrease in voltage production, a decrease of slow waves, and a more rhythmic tracing. Seizure discharges disappeared in many tracings after exercise. This normalization continued for 1 to 2 minutes after exercise. The abnormalities caused by hyperventilation after exercise were less marked and occurred later than in the first hyperventilation. The difference between first and second hyperventilation was less marked among epileptics than among normals. The changes in the post-exercise EEG and the reduced response to hyperventilation after exercise is related to metabolic acidosis brought about by muscular contraction. Acidosis reduces the irritability of the cortex and reduces the likelihood of seizures. (18 refs.) - *R. Froelich.*

Neurosurgical and Neurological Clinic
Free University of Berlin
Berlin, Federal Republic of Germany

Genetic Disorders

1766 BÖÖK, J. A. Genetical investigations in mental retardation. In: International seminar on medical genetics, August 31-September 3, 1966. *Alabama Journal of Medical Sciences*, 3(4):404-407, 1966.

Genealogic investigation of unselected isolated populations for the prevalent type of MR showed recessive patterns which might otherwise have been interpreted as polygenic in causation. Genetic background of homozygotes also revealed significant heterozygous effects. Parish records in isolated North-Swedish communities trace genealogy to the seventeenth century and include registration of MRs. In one community, MRs with clinical symptoms not otherwise classified (Down's syndrome) were found to have a similar syndrome (MR and symmetrical spastic motor defects) with genealogy suggestive of single recessive gene inheritance. MRs in another community showed dysarthria and normal development and, without genealogy again suggestive of a single recessive gene, would not have been identified as a specific genetic entity. (8 refs.) - *E. L. Rowan.*

Institute for Medical Genetics
Uppsala, Sweden

1767 REED, SHELDON C., & REED, ELIZABETH W. Family studies in mental retardation. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development.* New York, New York, Grune & Stratton, 1967, Chapter 2, p. 15-21.

A follow-up study of 289 MRs which included a re-evaluation of both the Ss and their available descendants indicated that the 1 factor most clearly associated with the appearance of MR was the presence of MR in 1 or more relatives. The Ss were from various parts of the U. S. and had originally been diagnosed as MR between 1911-1918. A total of 82,217 descendants of the 4 grandparents of the original Ss were located; 2,846 of these had died before the age of 2 years, while 79,376 were still alive at the time of this study. MR was defined as an IQ classification below 69, and 2,156, or 2.5 percent, of the descendant population were MR. MR etiological classifications in the original probands were: (1) genetic factors causing well-defined syndromes or chromosomal abnormalities in 84, or 30 percent of the Ss; (2) familial MR associated with assortive mating, low socioeconomic status, and conflict with society and probably due to genetic factors in 55, or 19 percent of the Ss; (3) environmental factors such as meningitis, poliomyelitis, encephalitis, scarlet fever, measles, whooping cough, pneumonia, congenital syphilis, birth injuries, or severe falls in 27, or 10 percent of the Ss; and (4) unknown factors in 123, or 42 percent of the Ss. Ss classified as familial MR produced 39 percent of the MR descendants. Either one or both parents of 48.3 percent of the present generation of MRs were retarded. The identification of the

cause of MR in 58 percent of the original population is hopeful in that such data could be used in the future to promote appropriate selective reproduction and prevent the birth of additional generations of MRs. (2 refs.) - *J. K. Wyatt.*

1768 CHENOWETH, ALICE D. Genetics in expanding health programs for mothers and children. In: International seminar on medical genetics, August 31-September 3, 1966. *Alabama Journal of Medical Sciences*, 3(4):355-358, 1966.

The Children's Bureau of the Department of Health, Education and Welfare administers broad programs in maternal and child health and aid to crippled children. Expanding genetic knowledge is translated into direct care and program-planning. The establishment of cytogenetic and biochemical laboratories aids in diagnosis, treatment, and follow-up of entities such as phenylketonuria and Down's syndrome. Grants are given to state and local health departments for Maternal and Infant Care projects to provide better antenatal and postnatal care for "high risk" patients in low-income areas and comprehensive medical care for children and youth in these same areas. The Bureau also helps support 12 centers for multiply handicapped children and 134 clinics for MR (as of the end of 1966). Training grants and research round out a program which will be extended to all states by 1975. (No refs.) - *E. L. Rowan.*

Division of Health Services
Children's Bureau
Washington, D. C.

1769 MOTULSKY, ARNO G. Biochemical genetics in medicine. In: International seminar on medical genetics, August 31-September 3, 1966. *Alabama Journal of Medical Sciences*, 3(4):359-369, 1966.

The association of MR with "inborn errors of metabolism" may represent a complicated interaction of metabolic derangement and genes predisposing to MR. Mutation in the DNA of genes causes faulty amino acid synthesis resulting in abnormal protein (hemoglobin and enzymes such as glucose-6-phosphate dehydrogenase) and may be homozygous or heterozygous. Variable responses to drugs have in some cases (pseudocholinesterase, acetylase for isoniazid) been due to heterozygous mutations, and such responses serve as a model of interaction between genetic variables and the exogenous agents of "disease" (MR in homocystinuria or methemoglobinemia). Recognition of an amino acid defect and dietary prophylaxis is useful in homozygous phenylketonuria, galactosemia, maple syrup urine disease, and homocystinuria. Detecting the heterozygotic carrier by enzymatic assay or electrophoresis would aid in genetic counseling, but it is more practical in X-linked traits than in autosomal recessives. (32 refs.) *E. L. Rowan.*

Department of Medicine
University of Washington
Seattle, Washington 98105

1770 McKUSICK, VICTOR A. Clinical genetics at a population level: The ethnicity of disease in the United States. In: International seminar on medical genetics, August 31-September 3, 1966. *Alabama Journal of Medical Sciences*, 3(4):408-423; discussion, 423-424, 1966.

Racial, religious, and social barriers to population mixing in the United States have created ethnic enclaves whose disease frequency can be studied epidemiologically in various ways for patterns of inheritance. A specific group can be surveyed for all disease, as in the case of the Old Order Amish who with their defined, closed, consanguineous population "demes" of known origin, extensive genealogy, and interest in illness have been found to exhibit high frequencies of a simple recessive pattern of Ellis-van Creveld syndrome, pyruvate kinase deficiency hemolytic anemia, hemophilia B (X-linked), limb girdle muscular dystrophy, and MR. Familial surveys of identified patients may demonstrate an ethnic pattern for a disease entity such as the autosomal recessive pattern in Jewish families for familial dysautonomia (Riley-Day syndrome), Tay-Sachs disease, and pentosuria along with a simple recessive pattern for homocystinuria. A population may be surveyed genetically and the frequency of each disease plotted by ethnic background; for example a high frequency of amyloidosis has been observed in people of German extraction in Washington County, Maryland. Finally, an ethnic group in the United States may be compared with a similar group in the country of origin. (12 refs.) *E. L. Rowan.*

Johns Hopkins Hospital
Baltimore, Maryland 21205

1771 LEJEUNE, JEROME. Gene dosage effects in man. In: International seminar on medical genetics, August 31-September 3, 1966. *Alabama Journal of Medical Sciences*, 3(4):425-430; discussion, 430-431, 1966.

Reciprocal syndromes seen in trisomy and monosomy of the same chromosome despite apparently normal gene content suggest that the biochemical reactions are being altered quantitatively rather than qualitatively. In families with both deletion of part of chromosome 5 and translocation of part of 5 to 13, children with the trisomy had a reciprocal syndrome (hoarse cry, long nose, severe MR) of typical *cri du chat*. A child with a ring-21 chromosome (95 percent monosomy in blood, 33 percent in tissue) was physically and biochemically opposite to trisomy 21 and had hypertonia, large ears, prominent nose, decreased leucocyte alkaline phosphatase, eosinophilia, and quantitatively different tryptophan metabolism. A countertype to trisomy 18 with a deletion of part of the long arm of chromosome 18 has also been discovered. The fact that all children who are trisomic or monosomic show severe MR suggests that any enzyme shift is deleterious to optimal function. (10 refs.) - *E. L. Rowan.*

Medical Faculty
University of Paris, France

1772 UCHIDA, IRENE A. Dermatoglyphics and chromosomes. In: International seminar on medical genetics, August 31-September 3, 1966. *Alabama Journal of Medical Sciences*, 3(4):432-434, 1966.

Specific dermatoglyphic patterns are recognized in trisomies, sex chromosome abnormalities, and autosomal deletions. Specific patterns are most prominent and of highest frequency in trisomy 21, trisomy 18, and trisomy D. The trisomy 21 is characterized by digital ulnar loops, a single crease on the fifth digit, distal axial triradius, simian crease, and arch tibial pattern on the hallucal area of the foot. Trisomy 18 pattern includes arches on most fingers and toes, a single crease on the fifth digit, indistinct palmar patterns, and simian. Distal triradius and simian crease comprise the dermatoglyphic characteristics of trisomy D. XO patients often present large digital loops or whorls, high digital ridge count, and distal triradius, while XXY Ss display frequent digital arches and low digital ridge count; these patterns are less characteristic, however, because sex chromosome abnormalities have less effect on ridge formation than autosomes do. Least distinctive of the dermatoglyphic patterns are those associated with the deficiency syndromes. Nevertheless, simian crease and distal triradius comprise an identifiable pattern in B-group deficiency. In 7 patients with 18 short arm deficiency no gross deviation in dermal patterns or flexion creases was observed. Additional data on patients of rarer genetic composition will provide more concrete dermatoglyphic differentiation. (No refs.) - *E. L. Rowan.*

Children's Hospital of Winnipeg
Winnipeg, Manitoba, Canada

1773 ROBERTS, J. A. FRASER. Reflections on 20 years experience of genetic counselling. In: International seminar on medical genetics, August 31-September 3, 1966. *Alabama Journal of Medical Sciences*, 3(4):435-439; discussion, 438-439, 1966.

Each year the clinic for genetic counseling in Bristol, England receives inquiries at the rate of 1/10,000 population, and 90 percent of these requests are from couples who have an abnormal child and who wish to know the risk of recurrence. Genetically determined entities such a metabolic disorders, congenital malformations, and familial neurological diseases indicate a much greater risk than that involved in common chronic diseases in the adult population. Moreover, the direct relationship existing between genetic simplicity and severity of outlook facilitates separation into "risk" groups: a "bad risk" is greater than 1 in 10, and a "good risk" less than 1 in 20; randomly, there is 1 abnormality in 35 births. The clinic provides either a definite estimate of risk or the knowledge that one cannot be made. Controlled follow-up is necessary to determine the utility of advice and to encourage "good risk" parents to have more children. (No refs.) - *E. L. Rowan.*

Guy's Hospital Medical School
London, England

1774 SUMMITT, ROBERT L., & *ATNIP, ROBERT L. Chromosomal aberrations with normal phenotype: Four examples. In: International seminar on medical genetics, August 31-September 3, 1966. *Alabama Journal of Medical Sciences*, 3(4):483-487, 1966.

Four families who are phenotypically normal have chromosomal variations on karyotypic examination. Three represent actual structural rearrangements--elongated short arms on a D chromosome, a satellite chromosome in the E group, and a more metacentric member of pair 2--and 1 demonstrates an altered appearance without structural rearrangement--size difference between the homologues of pair 16. Possible mechanisms include translocation, duplication, deletion, pericentric inversion, and variation in the behavior of heterochromatic regions. (6 refs.) - *E. L. Rowan.*

*Department of Pediatrics
University of Tennessee College of Medicine
Memphis, Tennessee 38101

1775 SMITH, DAVID W. Non-specifity of individual malformations in distinctive aneuploidy syndromes. In: International seminar on medical genetics, August 31-September 3, 1966. *Alabama Journal of Medical Sciences*, 3(4):488, 1966.

Patients with multiple malformations due to aneuploidy syndromes cannot be classified clinically on the basis of non-specific individual defects, but they can be identified on the basis of the total pattern of genetic alteration. Seven anomalies are common to trisomies 21, 18, and 13 and the XO syndrome: MR, short stature, inner epicanthic folds, malformed auricles, micrognathia, simian creases, and distal palmar axial triradii. Uncommon defects are more specific: hypotonia and upward slant to palpebral fissures in trisomy 21; clenched hand, low arch digital dermal pattern, and short sternum in trisomy 18; mid-facial, forebrain, and posterior scalp defects in trisomy 13; and gonadal dysgenesis, congenital lymphedema, and web neck in the XO syndrome. (No refs.) - *E. L. Rowan.*

Department of Pediatrics
University of Washington
Seattle, Washington 98105

1776 STERN, CURT. Some general aspects of human genetics. *American Journal of Obstetrics and Gynecology*, 99(5):604-614, 1967.

The nurture and nature of our being and the desirability of open-mindedness in genetic research are recurrent themes in this discussion of the genetic aspects of birth defects, spontaneous abortions, and mental illness. Recent advances in the field of genetics are reviewed. The known relationship between maternal age and Down's syndrome led to a number of incorrect assumptions about intrauterine environment until the trisomy nature of the disorder was discovered. Morever, a recent controlled study suggests a genetic factor in schizophrenia. PKU, a well-known disorder affecting IQ, is due to a single recessive gene. There is unequivocal evidence that other mental disturbances are genetically determined. Some of these include MR in individuals with Turner's syndrome and aggressiveness in XYY males. The environment has a strong effect on IQ, but it does not follow that the differences of IQ between individuals and subpopulations are due exclusively to non-genetic factors. Some studies have shown that although children born of low socioeconomic parents and raised in high socioeconomic environments have higher IQ scores than peers in the low socioeconomic groups, they are not equal to the level attained by their environmental peers. Emotionalism should not interfere with future investigation into these areas, and past errors in eugenics should not detract from future treatment possibilities. (No refs.) *R. Froelich.*

Departments of Zoology and Genetics
University of California
Berkeley, California 94700

1777 ALEXANDER, HATTIE E. Insight into human genetic defects through microbiological tools. In: Aslin, John A., Cooke, Robert E., & Haller, J. Alex, Jr., eds. *A Symposium on the Child.* Baltimore, Maryland, Johns Hopkins Press, 1967, Chapter 18, p. 275-289.

Although bacterial and mammalian cells represent widely different biologic forms, the results of studies which have applied principles governing genetic changes in bacteria to mammalian cells in tissue culture indicate that similar controls operate to prevent genetic change in each form and suggest

that additional research to determine whether the principles governing change in bacteria can be applied to the cells of children with inborn errors of metabolism and to neoplastic cells may add to the understanding of the control in these abnormalities and allow for change in an abnormal trait. In addition to the identification of principles governing bacterial genetic change, research evidence has revealed the existence of many barriers to genetic change in all systems studied. Change in heritable traits of bacteria was produced when (1) spontaneously occurring mutants in appropriate environments were selected for propagation and (2) a direct change was induced in the genome itself. Transformation, transduction, and conjugation or mating have been identified as mechanisms which produce heritable change in bacteria by transferring a part of the genome of a donor bacterium into a host bacterium, thus making genetic recombination a possibility. Evidence indicates that the mechanisms of transformation and transduction may operate in mammalian cells as well as in bacteria. These 2 mechanisms probably play a role in bacterial ecology, in evolution of epidemics, or in the natural transfer of resistance to antibiotics from one species to another. (28 refs.) - *J. K. Wyatt.*

1778 ROBINSON, ARTHUR, & PUCK, T. T. Medicine and the human chromosomes. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development.* New York, New York, Grune & Stratton, 1967, Chapter 1, p. 1-14.

The occurrence of human chromosomal nondisjunction, including anomalies of the sex chromosomes, appears to be nonrandom and may be etiologically related to socioeconomic and viral factors. A 27-month investigation of the status of the sex chromatic body in the somatic cells of 3,590 newborn babies in 2 Denver, Colorado, hospitals revealed that: (1) all of the 6 sex chromosome anomalies occurred within a 5-month period, (2) the high incidence of anomalies during this period was unprecedented (0.595 percent), and (3) frequency of Down's syndrome during this period was 0.23 percent as opposed to 0.063 percent during the remainder of the study. Buccal smear and amniotic membrane procedures were used to determine sex chromatin. Colorado General Hospital is a public institution serving mainly an indigent population, while General Rose Hospital is private. Out of the 6,500 newborns included in the study thus far, 11 of the 12 infants in whom sex chromosomal anomalies have been discovered were born at the Colorado General Hospital. Additional research aimed at identifying factors responsible for the differential behavior of these 2 hospital populations is underway. (35 refs.) - *J. K. Wyatt.*

1779 JACOBSON, CECIL B., & BARTER, ROBERT H. Intrauterine diagnosis and management of genetic defects. *American Journal of Obstetrics and Gynecology,* 99(6):796-805; discussion, 805-807, 1967.

The successful tissue culture of 57 of 85 human amniotic fluid samples demonstrated that this procedure is a suitable system for intrauterine diagnostics. Amniocentesis was performed before 20 weeks of gestation in 56 cases. The number of viable cells per sample was directly related to the stage of pregnancy. The earlier pregnancies accounted for 15 of 18 nonviable samples, and satisfactory samples were obtained as early as 5 weeks. When the 7 samples of amniotic fluid from sheep at term were included, the total number of samples with viable cells was 74. The culture success rate (62 of 74) was 83 percent. Antenatal sex prediction was correct in 71 of 75 cases (95 percent). No cases of maternal or fetal complications from the procedure were documented. Case material was presented on 6 women with genetic high-risk pregnancies who received a diagnostic aminocentesis. Problems included a D/D translocation carrier state, a D/G carrier state, a previous mongoloid birth, 2 instances of maternal rubella, and 1 instance of multiple X-ray exposure. Cytogenetic analysis was helpful in these cases. The problems of clinical application include the ability to obtain a satisfactory sample early enough to allow therapeutic abortion, the proper evaluation of fetal and maternal risk, reliable diagnosis, and selection of appropriate genetic risk cases for study. (4 refs.) - *R. Froelich.*

George Washington University
School of Medicine
Washington, D. C.

1780 NIELSEN, JOHANNES. Inheritance in monozygotic twins. *Lancet,* 2(7518): 717-718, 1967. (Letter)

Chromosomal studies show that monozygotic twins are not always genetically identical. Of the 23 pairs in which 1 or both had a

326-079 O - 68 - 6

chromosome abnormality, 7 pairs had different chromosome constitutions, 2 pairs had mosaicism, and 3 pairs were presumed to have different chromosome constitutions with different general appearance. Two pairs had 1 twin who was male and the other female. The abnormal twin had Down's syndrome in 5 pairs and Turner's syndrome in 6 pairs. (24 refs.) *J. Snodgrass.*

Cytogenetic Laboratory
Aarhus State Hospital
Risskov, Denmark

1781 BLOOM, ARTHUR D., NERIISHI, SHOTARO, ARCHER, PHILIP G. Cytogenetics of the in-utero exposed of Hiroshima and Nagasaki. *Lancet,* 2(7558):10-12, 1968.

Among 38 in-utero-exposed survivors of Hiroshima and Nagasaki whose mothers were exposed to more than 100 rad at the time of the bombings, the frequency of cells with complex chromosomal rearrangements was 0.52 percent. Among 48 controls, the frequency was 0.04 percent. Thirty-nine percent of the in-utero exposed survivors had these aberrations, as contrasted to 4 percent of the controls. These results suggest that both lymphocyte precursors and mature, immunologically competent lymphocytes were affected in utero by the ionising radiations of the A-bombs. (13 refs.) - *Journal abstract.*

Department of Human Genetics
University of Michigan
Medical School
Ann Arbor, Michigan

1782 JAYLET, A., & BACQUIER, COLETTE. Accidents chromosomiques obtenus à l'état hétérozygote dans la descendance viable de mâles irradies, chez le Triton *Pleurodeles waltlii* MICHAH. (Heterozygous chromosomal aberrations in the viable offspring of X-irradiated male newts [*Pleurodeles waltlii* MICHAH].) *Cytogenetics,* 6(6):390-401, 1967.

The offspring of irradiated male newts were studied in hopes of finding chromosomal aberrations. Several males who had received X-ray doses of 250-500 roentgens on the posterior part of the body were mated with normal females. The proportion of abnormal embryos arising from these matings was significant. Six of the 80 offspring showed deletion and translocation abnormalities in their chromosomes. (24 refs.) *S. Katz.*

Laboratoire de Biologie Générale
Faculté des Sciences
118, Route de Narbonne
Toulouse 31, France

1783 WARBURTON, DOROTHY, & MILLER, O. J. Dermatoglyphic features of patients with a partial short arm deletion of a B-group chromosome. *Annals of Human Genetics,* 31(2):189-207, 1967.

Fifty-four patients with *cri du chat* syndrome and deletion of part of the short arm of a B-chromosome (20 of earlier replicating shorter pair 5, 6 of later replicating longer pair 4, and 28 unspecified) were studied dermatoglyphically. The combined group of deletion 5 and unspecified had a digital pattern of increased frequency of whorls and decreased frequency of ulnar loops. The axial triradius was shifted distally to *t'* position on at least 1 hand in 42 of the 46 in this combined group, and hypothenar patterns were significantly absent. Thenar/first interdigital patterns and fourth interdigital patterns, especially D-line terminations, were more frequent (normals had C-line terminations). Pair 4 deletions had significantly more digital arches with smaller digital ridge counts and more hypoplastic hypothenar ridges. There was an overall increase in syndactyly and presence of Simian creases. Family members who carried a balanced translocation or no karyotypic abnormality had no significant dermatoglyphic changes--with the possible exception of increased frequency of digital whorls, which are probably hereditary. (42 refs.) - *E. L. Rowan.*

Department of Obstetrics and Gynecology
Columbia University
New York City, New York 10032

1784 LEÃO, JOSÉ CARNEIRO, BARGMAN, GERALD J., NEW, RICHARD L., KAJII, TADASHI, & *GARDNER, LYTT I. New syndrome associated with partial deletion of short arms of chromosome No. 4. *Journal of the American Medical Association,* 202(5):434-438, 1967.

A 2-month-old male infant with a partial deletion of the short arms of chromosome No. 4 demonstrated MR, growth retardation,

asymmetry of the head, prominent glabella, hypertelorism, seizures, and other abnormalities. This syndrome, of which there are 7 known cases, is considered a distinct entity from the cat cry sundrome. The common features in patients with deletion of No. 4 chromosome included absence of cat-like cry, seizures, prominent glabella, midline scalp defects, deformities of the iris, cleft lip and palate,preauricular dimple, misshapen nose, hypospadias, and hypoplasia of the dermal ridges. Five of the 7 diagnoses were confirmed with autoradiographic study. Three have died; ages at time of death were 32 days, 1-1/2 years, and 3-1/4 years, respectively. The case reported was delivered by cesarean section but was otherwise the product of an unremarkable pregnancy. He was presented at Upstate Medical Center (Syracuse, New York) at 2 months of age because of inactivity and unresponsiveness. Other abnormalities noted were an epicanthus, strabismus, low set simple ears, an iris deformity, hypoplastic nipples, simian creases, hypospadias, undescended testicles, and inguinal hernias. Seizures occurred when the S was 8-1/2 months old. Chromosomal studies using leukocyte cultures showed a partial deletion of the short arm of a B-group chromosome with no visible evidence of a translocation. Labeled metaphases showed that the chromosome was late replicating, and it was considered to be No. 4. (6 refs.) *R. Froelich.*

*Department of Pediatrics
Upstate Medical Center
Syracuse, New York 13210

1785 TISCHLER, BLUMA, COREY, MARGARET J., & CO-TE, PACITA. Mental retardation in a child with a long B-group chromosome. *Journal of Medical Genetics,* 5(2):134-136, 1968.

A boy with a CA of 4 1/2 years and an MA of 4 months (Griffith's scale) presented with small stature, asymmetrical skull, antimongoloid slant of the eyes, epicanthic folds, hypertelorism, high arched palate, malocclusion, beak-shaped nose, and asymmetrical ears. Karvotype analysis revealed only 3 B-group chromosomes and 1 long, unpaired chromosome with short arms similar to the rest of the B-group, but with the long arms considerably elongated. Dermatoglyphic study showed a single palmar crease bilaterally, distal displacement of the axial triradii, and reduced ridge count. Phenotypically the patient was dissimilar to previously reported cases with similar B-group abnormalities. Because paternal karyotype could not be obtained (maternal was normal), the origin of the excess material could not be determined. (14 refs.) - *E. L. Rowan.*

The Woodlands School
New Westminster
British Columbia, Canada

1786 ATKINS, L., PANT, SHYAM S., HAZARD, G. W., & OUELLETTE, EILEEN M. Two cases with a C-group ring autosome. *Annals of Genetics,* 30(1):1-5, 1966.

Two boys with a C-group ring autosome of the 6-X-12 group are described. The institutionalized 8 1/2-year-old SMR presented microcephaly, low set ears, hypotonia, bilateral horizontal nystagmus, and a waddling gait. A presumed translocation of a B-group chromosome and a fragment of a C-group autosome were also observed. The 2 1/2-year-old was characterized by slight physical and mental retardation. (19 refs.) *S. Katz.*

Department of Neurology
Massachusetts General Hospital
Boston, Massachusetts 02114

1787 PITT, D. B., WEBB, G. C., WONG, JACQUELINE, ROBSON, MERRYL K., & FERGUSON, JEAN. A case of translocation (C/14) with mental retardation in two offspring. *Journal of Medical Genetics,* 4(3):177-183, 1967.

An MR 3-year-old boy whose deceased sister had had a similar mental deficit, had a karyotype resembling trisomy 21. The boy appeared normal except for delayed milestones and MR. His oldest sister, who was also MR, had died of bronchopneumonia at 17 months of age. One older sibling was normal. Clinical examination showed partial syndactyly of the second and third toes and an IQ of 33 (according to the Piaget Method). Blood and skin cultures revealed 47 chromosomes with 6 small acrocentrics. His mother had 46 chromosomes with only 15 group C chromosomes and 5 group D chromosomes; 2 abnormal chromosomes were found which were thought to be the result of a reciprocal translocation between the missing C and D chromosome. Autoradiographic studies indicated that the missing D chromosome was probably No. 14. The father and other immediate relatives had a normal karyotype. Dermatoglyphic studies of the

propositus were not remarkable. Were it not for his phenotype, the karyotype of the propositus would have been considered trisomy 21. The formation of these findings may be caused by some possible meiotic situations. (15 refs.) - *R. Froelich.*

Children's Cottages Training Centre
Kew, Victoria, Australia

1788 JACOBS, PATRICIA A., CRUICKSHANK, GILLIAN, FAED, M. J. W., FRACKIEWICZ, ANNA, ROBSON, ELIZABETH B., HARRIS, HARRY, & SUTHERLAND, I. Pericentric inversion of a group C autosome: A study of three families. *Annals of Human Genetics*, 31(3):219-230, 1967.

During 6 years of cytogenetic examination, 3 families were discovered to have an identically abnormal acrocentric Group C autosome (probably No. 10) which was identified by DNA studies to be late, but not last, to replicate and which was assumed to be the result of pericentric inversion. Propositi presented with primary amenorrhea, multiple congenital malformations, and low hair line, respectively. Extensive pedigree studies showed apparently random transmission for up to 5 generations with no significant fetal wastage or clinical symptomatology. The linkage of various autosomal blood groups and biochemical marker genes to this abnormality could not be demonstrated because there were no acceptable lod scores. (14 refs.) - *E. L. Rowan.*

MRC Clinical Effects of
Radiation Research Unit
Western General Hospital
Edinburgh, Scotland

1789 HECHT, FREDERICK. Phenotypic differentiation of autosomal chromosomal abnormalities: Anomalies on the gross, radiologic, autopsy, cellular, and molecular levels in the D_1 (13-15) trisomy syndrome. In: International seminar on medical genetics, August 31-September 3, 1966. *Alabama Journal of Medical Sciences*, 3(4):489-492, 1966.

Detailed phenotypic examination of patients with D_1 (13-15) trisomy shows this entity to be clinically different from other aneuploidy syndromes. These patients characteristically have eye malformations, cleft lip-palate, and polydactyly; less frequently manifestations include a scalp defect, deep V-shaped pilonidal depression, and soft tissue web across the axilla. Radiologically there are frequent anomalies in rib number and morphology, and the pelvis is often misshapen, with low acetabular angles. At autopsy, arrhinencephaly is a common finding, while intestinal malrotation, accessory spleens, bicornuate uterus and renal and adrenal cysts are found less commonly. Microscopically there is an abnormality in the ontogeny of hemoglobin with persistence of embryonic Gower 2 until birth, delay of elimination of fetal hemoglobin F in infancy, and slow rise of adult hemoglobin A_2 to adult levels. (26 refs.) - *E. L. Rowan.*

Department of Pediatrics
University of Oregon Medical School
Portland, Oregon 97201

1790 HAUSCHTECK, ELISABETH, MÜRSET, GERTRUD, PRADER, A., & BÜHLER, ERIKA. Siblings with different types of chromosomal aberrations due to D/E translocation of the mother. *Cytogenetics*, 5/1/2):281-294, 1966.

Each of 2 siblings with MR and other congenital malformations had chromosomal abnormalities of a different type which presumably arose from the D/E translocation of the phenotypically normal mother. Dermatoglyphic examination of the mother showed a curve on the left foot suggestive of the S-curve seen in D trisomy. Both siblings had the common characteristics of MR, short stature, flexion of the fingers, and a mild scrotal abnormality. Child 1 had features resembling D trisomy syndrome and a karyotype which demonstrated a large D/E translocation chromosome with only 1 chromosome 17. Child 2 had features which resembled the E trisomy syndrome, and his karyotype demonstrated 47 chromosomes with the proximal part of the involved maternal chromosome D inherited as an extra chromosome. He could have been trisomic for part of the D chromosome as well as for a region of chromosome 17, since a reciprocal translocation was possibly involved. This possibility was supported by the clinical picture. The

mother's karyotype demonstrated an additional chromosome in group C and group G, with a chromosome missing from group D and group E. The mother had 2 other pregnancies, 1 of which ended in spontaneous abortion. The abortus had a karyotype similar to that of the mother. The karyotypes of both the maternal grandmother and the father of child 1 and child 2 were normal, but a maternal aunt had 2 of 18 mitoses showing an abnormal karyotype. (13 refs.) *R. Froelich.*

Zoological Museum of the
University of Zurich
Künstlergasse 16
8006 Zurich, Switzerland

1791 COHEN, M. M., & LOCKWOOD, MARILYN A. Familial transmission of a presumptive D/E (13-15/17-18) short arm translocation. *Pediatric Research*, 1(2):104-109, 1967.

A 5-month-old infant, his mother, and sister were found to have a presumptive D/E translocation in which only the short arm of each chromosome was involved. The propositus had a birth weight of 2,506 g and was evaluated at 17 days of age because of frequent unilateral seizures involving either side of the body. He had an unusual facies, ears were low set, and the eyes showed antimongoloid palpebral fissures. Serum calcium levels were low but returned to normal following intravenous and oral calcium therapy. He probably had a ventricular septal defect. The S developed a bloody diarrhea which was treated with antibiotics. Although mental status was normal, head control was poor at 5 months of age, and muscles were hypotonic. Peripheral leukocyte cultures were obtained via the Moorhouse Method from each family member. The modal chromosome count was 46 in all individuals. The propositus, his sister, and mother had abnormal karyotypes which consisted of an obviously satellited member among the chromosomes of pairs No. 17-18. This abnormal chromosome often was found at the periphery of the metaphase plate and entered into association with other satellited acrocentrics. One member of group D had an abnormal knobby short arm in most cells which did not show satellite association. The most likely explanation for the karyotype in these individuals is a balanced reciprocal translocation involving the short arm of a D and E group chromosome. (22 refs.) - *R. Froelich.*

Department of Pediatrics
State University of New York
at Buffalo
Buffalo, New York 14200

1792 HECHT, FREDERICK, CASE, MILTON P., LOVRIEN, EVERETT W., HIGGINS, JAMES V., THULINE, HORACE C., & MELNYK, JOHN. Nonrandomness of translocations in man: Preferential entry of chromosomes into 13-15/21 translocations. *Science*, 161(3839):371-372, 1968.

Lymphocytes from 20 individuals with Down's syndrome due to 13-15/21 centric-fusion translocations were studied by autoradiography after continuous late labeling with tritiated thymidine. In no case was chromosome 13 involved; chromosome 14 was involved in 18 cases, and chromosome 15 in 2 cases. These results are similar to those from 13 previously studied cases and indicate that the entry of chromosomes 13-15 into translocations is nonrandom. This nonrandomness is not a simple function of chromosome size or shape, since chromosomes 13-15 are acrocentrics of similar size. (12 refs.) *Journal abstract.*

University of Oregon
Medical School
Portland, Oregon 97201

1793 GORLIN, ROBERT J., YUNIS, JORGE, & ANDERSON, V. ELVING. Short arm deletion of chromosome 18 in cebocephaly. *American Journal of Diseases of Children*, 115(4): 473-476, 1968.

Midline facial and cerebral dysplasias are associated with the chromosomal abnormalities of trisomy D1 and short arm deficiency of chromosome 18. An infant who presented with respiratory distress had a single nasal

orifice, ocular hypotelorism, and a depressed nasal area. X-rays did not demonstrate a nasal vestibule. Postmortem examination showed a small, single anterior cranial fossa containing fused cerebral hemispheres. Corpus callosum, septum pelucidum, and olfactory lobes were absent, pituitary was small, and frontal lobes were occupied by a cerebrospinal fluid-filled mass of convoluted brain tissue. Examination of karyotype revealed an almost complete deletion of the short arm of a chromosome which best fit the character of a number 18. Previous reports of cyclopia and arhinencephaly with premaxillary agenesis, in addition to another example of cebocephaly with a similar deletion, make an incidental association unlikely. (34 refs.) - *E. L. Rowan.*

Division of Oral Pathology
School of Dentistry
University of Minnesota
Minneapolis, Minnesota 55455

1794 ROSS, LUCILLE J. Dermatoglyphic observations in a patient with trisomy 18. *Journal of Pediatrics,* 72(6):862-863, 1968.

An 18-month-old girl with trisomy 18 was found to have radial loops on both thumbs, a general shallowness of ridges, and partial lack of pattern formation. Four of 11 other trisomy 18 cases from the literature were noted to have radial loops on the thumbs (present in 0.2 percent of normal population), and none were noted to have whorls on any fingertips (normal in 25 percent). (7 refs.) - *E. L. Rowan.*

Vanderbilt Clinic, Presbyterian
Hospital
622 West 168th Street
New York, New York 10032

1795 RABINOWITZ, JACK G., MOSELEY, JOHN E., MITTY, HAROLD A., & HIRSCHHORN, KURT. Trisomy 18, esophageal atresia, anomalies of the radius, and congenital hypoplastic thrombocytopenia. *Radiology,* 89(3):488-491, 1967.

Data on 3 infants with trisomy 18 confirming radial dysplasia in all 3, thrombocytopenia in 2, and esophageal atresia in 2 suggest that these associated findings are related to the chromosomal defect. Case 1 weighed 1,600 gm at birth and had a large head, receding chin, fish-like mouth, low posterior ears, flexion deformity of both wrists, incurving forearms, 4 fingers on the right hand, a cardiac murmur, anti-mongoloid pelvis, and esophageal atresia. She died at 2 months of age. Case 2 demonstrated cyanosis, a large omphalocele, small eyes and ears, receding chin, small forearms, 4 fingers on each hand, and flexed wrists. He died at 30 hours of age. Autopsy showed esophageal atresia, hydronephrosis, agenesis of the radii, and absence of megakaryocytes. Case 3 demonstrated cyanosis, a flexion deformity of 1 wrist, petechiae, low-set rotated ears, cardiac enlargment, and thrombocytopenia. Autopsy showed a tetralogy of Fallot and hypoplasia of the left radius and thumb. Chromosomal studies confirmed the diagnosis of trisomy 18 in cases 1 and 3. Case 2 was diagnosed on the basis of clinical, X-ray, and pathological findings. The coexistence of these anomalies may not be as rare as previously thought. The etiology is not clear but possibly is related to the basic chromosomal anomaly of chromosome No. 18. (10 refs.) - *R. Froelich.*

Departments of Radiology and
Pediatrics
Mount Sinai School of Medicine
New York, New York 10000

1796 KWITEROVICH, PETER O., JR., CROSS, HAROLD E., & McKUSICK, VICTOR A. Mongolism in an inbred population. *Bulletin of the Johns Hopkins Hospital,* 119(3):268-275, 1966.

The incidence of mongolism in the Old Order Amish settlement (Holmes County, Ohio) was 0.16 percent, which is about the same incidence found in outbred populations. Seventeen cases of mongolism were clinically diagnosed in the inbred population of about 10,000. Karyotype analysis of leukocyte or skin culture revealed 15 Ss with classical G1 (21-22) trisomy, 1 with a D/G1 (13-15, 21-22) translocation, and 1 with a normal karyotype. Clinical features were typical of Down's syndrome. The most frequent traits exhibited were narrow, high palate; flat occiput; MR; flat, broad nose; epicanthic folds; hyperflexibility; oblique palpebral fissures; furrowed tongue; and shortness. Dermatoglyphic analysis showed a Walker score of over +1 in all but 4 cases, but the dermatoglyphic patterns of the fourth and fifth fingers were atypical of

those patterns previously described. There was no evidence for the influence of a recessive factor predisposing to the production of aneuploidy in this population. This study does not disprove genetic control of non-disjunction. The possibility remains that this particular Amish population is free of genes predisposing to meiotic or mitotic abnormalities and that it therefore demonstrates a normal frequency of mongolism. (30 refs.) - *R. Froelich.*

The Johns Hopkins University
School of Medicine
Baltimore, Maryland

1797 PABST, H. F., PUESCHEL, S., & *HILLMAN, D. A. Etiologic interrelationship in Down's syndrome, hypothyroidism, and precocious sexual development. *Pediatrics*, 40(4,I):590-595, 1967.

Study of an 8-year-old mongoloid, hypothyroid girl with precocious puberty suggests that hypothyroidism and Down's syndrome may be related to thyroid autommunity and that sexual precocity may be related to the ovarian response to excessive thyrotropin (TSH) stimulation. The S's development was relatively normal for a mongoloid until at 4 years of age she became less active, stopped growing, and developed a coarse voice. At 6 years of age she began having irregular menstral periods and began breast development. Other signs of hypothyroidism and precocious sexual development were also present. A large abdominal mass was removed and was found to be an edematous, hemorrhagic, infarcted multiple cyst. Laboratory studies showed normochromic anemia, protein bound iodine of 1.7 μg/100 ml, iodine-131 uptake of 13 percent/24 hours, elevated TSH of 44 milliunits/100 ml,urinary 17-ketosteroid excretion of 1.29 mg/24 hours, diffusely abnormal EEG, a bone age of 4.4 years, significantly elevated thyroid antibodies, and a total urinary estrogen excretion of 21.4μg/24 hours. Her IQ according to the Stanford-Binet intelligence scale was 33. Daily treatment with 0.2 mg sodium l-thyroxin resulted in disappearance of myxedema and regression of sexual precocity. An experiment with rats showed that injection of TSH produced a significant increase of uterine and ovarian weights. (28 refs.) *R. Froelich.*

*2300 Tupper Street
Montreal 25, Quebec, Canada

1798 MIKKELSEN, MARGARETA. Down's syndrome at young maternal age: Cytogenetical and genealogical study of eighty-one families. *Annals of Human Genetics*, 31(1): 51-69, 1967.

Of 100 children with Down's syndrome who had mothers 30 years old or less, 9 had translocations and 2 were mosaics. The main purpose of the study was to find the frequency of translocations in mongoloids with young mothers. In 64 cases both parents were examined cytogenetically. Seven additional cases in which the child was born dead were also examined. The usual method of examination was either blood or skin fibroblast culture. Four cases had a sporadic 21-22/21 type translocation, and 5 cases had a 13-15/21 type interchange. Of the latter type, 3 were sporadic and 2 were inherited from a carrier mother. Mosaicism of normal/trisomy 21 was found in 1 boy who had a congenital heart defect and some features of Down's syndrome. Another patient with typical clinical Down's syndrome showed a few acrocentric chromosomes; this may also represent mosaicism with predominance of trisomic cells. No case of parental mosaicism was found, but the incidence of stable and unstable aberrations (Cu and Cs cells) and missing and additional chromosomes was significantly higher in parents of patients also showing these abnormalities than in the parents of patients not showing them. The ages of the maternal grandparents were significantly higher than the ages of the paternal grandparents. There were 9 autosomal variants and 4 Y chromosomal variants among patients or parents. (51 refs.) - *R. Froelich.*

The University Institute of
Medical Genetics
Copenhagen, Denmark

1799 COWIE, VALERIE A. Chromosomal findings in a population-based sample of mongols. In: International seminar on medical genetics, August 31-September 3, 1966. *Alabama Journal of Medical Sciences*, 3(4): 493-495, 1966.

Sixty-five infants with clinical mongolism were identified as soon as possible after birth in defined geographical areas. On karyotypic examination the 3 who were not purely trisomic showed a G/G translocation,

a D/G translocation, and a B/C or B/X translocation with trisomy G respectively; these findings are consistent with previous surveys showing 1.5 percent D/G, 1.4 percent G/G, and 2.4 percent mosaicism. The G/G and D/G infants had respiratory difficulty at birth and died within 7 months. The infant with a balanced translocation was the least hypotonic in the series, was neurologically normal, and was developing well at 2 1/2 years of age. (1 ref.) - *E. L. Rowan.*

Maudsley Hospital
Denmark Hill
London S. E. 5, England

1800 FORSSMAN, H., & ÅKESSON, H. O. Note on mortality in patients with Down's syndrome. *Journal of Mental Deficiency Research*, 11(2):106-107, 1967.

Mortality in patients with Down's syndrome and in a group of normal Ss was computed and compared on the basis of: (1) number of years the mongoloids survived (R-values), (2) number of years controls could be expected to survive (P-values), and (3) total number of years in the observation period (Q-values). The death rate for mongoloids was computed in terms of the ratio Q-R/Q-P. Ages 1-4 had ratios of 37 for males and 24 for females; ages 5-9 had 22 and 36, and age 10 and older had 10.4 and 12 respectively for males and females. (4 refs.) - *J. Snodgrass.*

St. Jörgen Hospital
Lillhagen, Sweden

1801 GOODMAN, HAROLD O., & THOMAS, JAMES J. ABO frequencies in mongolism. *Annals of Human Genetics*, 30(1):43-48, 1966.

The ABO frequencies of 581 institutionalized mongoloids were compared with those of an institutionalized control group. No significant difference was found between blood-group gene frequencies in mongoloids and those in other retardates. However, a deficiency of type O and an excess of types A and AB were observed. Counties of residence and ethnic origin of the 2 groups were comparable. (10 refs.) - *S. Katz.*

Bowman Gray School of Medicine
Winston-Salem, North Carolina 27103

1802 BENSON, PHILIP F., & DE JONG, MIES. Leucocyte-hexokinase isoenzymes in Down's syndrome. *Lancet*, 2(7561):197-198, 1968.

Three forms of leucocyte hexokinase were identified by differential rates of anodal migration using starch-gel electrophoresis. Characteristic kinetic properties for each form were revealed by intensity of staining at different substrate concentrations. Children with Down's syndrome were found to have similar isoenzyme patterns to controls. (9 refs.) - *Journal abstract.*

Pediatric Research Unit
Guy's Hospital Medical School
London S. E. 1, England

1803 STERN, LEO, CAMERON, DOROTHY, & DALLAIRE, LOUIS. Neonatal jaundice associated with erythrocyte glucose-6-phosphate dehydrogenase deficiency in a non-Mediterranean Caucasian infant with trisomic Down's syndrome. *Canadian Medical Association Journal*, 98(25):1196-1197, 1968.

The occurrence of neonatal jaundice associated with a deficiency of erythrocyte G-6-PD in a trisomic mongol infant and his mother is reported. Instability of glutathione and excess Heinz body formation were seen in both baby and mother but were not found in the normal father. The association of the enzyme defect with mongolism is reported for the first time. Also unusual is the occurrence of G-6-PD deficiency in Caucasians of non-Mediterranean origin. Despite the simultaneous occurrence of two chromosome-mediated disorders there seems no way to connect them other than as a chance finding. (23 refs.) - *Journal summary.*

The Montreal Children's Hospital
2300 Tupper Street
Montreal 25, Quebec, Canada

1804 PAINE, RICHMOND S. Enzymatic studies in Down's syndrome. In: International seminar on medical genetics, August 31-September 3, 1966. *Alabama Journal of Medical Sciences*, 3(4):452-454, 1966.

Cellular and plasma enzymes were utilized to differentiate between clinically similar mongoloid patients with trisomy 21 and

translocation 21 confirmed by karyotype. Enzyme assay performed on fresh blood sample from 12 translocation patients and 12 trisomies matched for age and sex revealed that galactose-1-phosphate uridyl transferase in white blood cells (WBC) and red blood cells (RBC) was elevated in the trisomies but not in the translocations or the normals. Patients with trisomies had similar elevations in alkaline phosphatase (WBC), acid phosphatase (WBC), glucose-6-phosphate dehydrogenase (RBC) and 5-nucleotidase (WBC). Plasma creatine phosphokinase was significantly above-normal in both mongoloid groups. Five parents (D/G carriers) of patients with translocations had no enzymatic abnormalities. The "gene-dose hypothesis" is not borne out by the degree of enzyme elevation, and a more remote effect is postulated. (1 ref.) *E. L. Rowan.*

Children's Hospital of the
District of Columbia
Washington, D. C.

1805 McCOY, ERNEST E. Induction of leucocyte alkaline phosphatase by steroids in Down's syndrome. In: International seminar on medical genetics, August 31-September 3, 1966. *Alabama Journal of Medical Sciences*, 3(4):447-449, 1966.

Data on steroid stimulation provides additional evidence to support the hypothesis that the genetic locus for leucocyte alkaline phosphatase (LAP) is on chromosome 21. The data augments previously published reports on increased enzymatic activity in trisomy 21 (Down's syndrome) and decreased activity in chronic myelogenons leukemia associated with a deletion of a portion of chromosome 21. Progesterone injected intraperitoneally in rabbits was found to increase LAP activity. The fact that the administration of actinomycin D simultaneously with progesterone resulted in no increase in LAP activity indicates that the activity is dependent on DNA synthesis. Administration of puromycin, an inhibitor of protein synthesis, also resulted in no increase in LAP activity. These facts suggest that the steroid induces enzyme activity. Patients with Down's syndrome were matched with controls by age, weight, and environment. Injections of progesterone and prednisolone (control for rapidity of absorption) caused a significant increase in LAP activity in patients with trisomy 21. Nonspecific multiple enzyme increase was ruled out by insignificant differences in the activity of glucose-6-phosphate dehydrogenase (X-linked). (No refs.) - *E. L. Rowan*

Department of Pediatrics
University of Virginia
Charlottesville, Virginia 22904

1806 MILUNSKY, AUBREY, MARKS, VINCENT, & SAMOLS, ELLIS. Insulin and glucose response to glucagon in Down's syndrome. *Lancet*, 2(7525):1093-1094, 1967. (Letter.)

Sixteen children (5 normal, 5 MR, and 6 mongoloid) aged 20 months to 6 years, 4 months who were on high carbohydrate diets of 1,000-2,000 calories/day were studied for their response to glucagon. Previous data indicating that glucagon promotes insulin secretion and that such action is less effective in children than in adults were confirmed. (10 refs.) - *J. Snodgrass.*

Queen Mary's Hospital
Carshalton, Surrey
England

1807 MILLER, JAMES McC., SHERRILL, JOHN G., & HATHAWAY, WILLIAM E. Thrombocythemia in the myeloproliferative disorder of Down's syndrome. *Pediatrics*, 40(5):847-850, 1967.

An infant with Down's syndrome and an associated myeloproliferative disorder had findings of thrombocythemia, abnormally large and bizarre-appearing platelets, and secondary hypercoagulability. This supports the hypothesis that ineffective regulation of myeloid production and maturation is a part of Down's syndrome. The infant, who expired at 5 weeks of age from pneumonia and sepsis, also had imperforate anus, patent ductus arteriosus, aganglionic megacolon, splenomegaly, and pseudohyperkalemia. (18 refs.) - *D. Martin.*

University of Colorado
Medical Center
4200 East Ninth Avenue
Denver, Colorado 80220

1808 BORGAONKAR, D. S., DAVIS, M., HERR, H. M., & BOLLING, D. R. Evaluation of dermal patterns in Down's syndrome by predictive discrimination. Paper presented at the annual meeting of the American Society of Human Genetics, Toronto, Canada, December 1-3, 1967, 12 p. Mimeographed. Copies available from author.

A technique of predictive discrimination for Down's syndrome through the use of dermatoglyphics is described. The score is a slight refinement of the Walker score. Its purpose is to clearly, correctly, and easily differentiate between mongoloids and normal individuals. The flexion creases of the left fifth finger were used as an illustration of this technique. The frequency of flexion creases in known mongoloids and known controls is compared with their frequency in a person of unknown karyotype. The probabilities are calculated from this data. The natural logarithm of the odds in favor of the unknown being mongoloid is called ln R or "log odds." The log odds appear more complex than the log frequency ratios of Walker but are used in the same way. The problem of classifying the unknown as a mongoloid or as a control can be tested separately against the less restrictive hypothesis that the unknown need not be either one. An unknown individual is scored by adding the log odds presented in the appendix table for each of his patterns. (18 refs.) *R. Froelich.*

Division of Medical Genetics
Johns Hopkins Hospital
Baltimore, Maryland 21205

1809 CARTER, CHARLES H. Unpredictability of mental development in Down's syndrome. *Southern Medical Journal*, 60(8): 834-838, 1967.

Three cases of mongolism without MR are presented to illustrate both the diagnostic difficulties and the advantages of keeping the mongoloid child in the home for at least the first few years of life. Case 1 is a 4-year-old female with characteristic features of Down's syndrome and a karyotype suggesting a 13-15 translocation. The parents rejected advice to institutionalize the child. She has an estimated IQ of 120 (Cattel Infant Scale), appears to be mentally normal, and is accepted by the family. Case 2 is a 22-year-old man who at the insistence of his parents was never institutionalized. He completed the eighth grade and left school only because his appearance caused social problems. He lives independently and earns his own living. His IQ is estimated at 80 (Binet L-M). Chromosomal analysis showed a trisomy 21/normal mosaicism of about equal ratio in the lymphocytes. Case 3 is a 25-year-old school teacher who was raised at home, developed normally, and completed college, obtaining a B. A. degree. She appears to be classically mongoloid but would not permit chromosomal analysis. The diagnosis of Down's syndrome must be made with extreme care. Severe MR is not necessarily present, particularly in mosaic states or translocation mongoloids. Home care appears to be more advantageous than institutional care for these children. (17 refs.) - *R. Froelich.*

Sunland Hospital
Orlando, Florida

1810 MILLER, ROBERT C., *GOODMAN, RICHARD M., MILLER, FRANCES R., & NUSBAUM, LANA. A new variant of Klinefelter's syndrome with a presumptive deleted Y chromosome. *Annals of Internal Medicine*, 67(4): 825-831, 1967.

A 34-year-old white male with Klinefelter's syndrome was found to have many variants including SMR, microcephaly, bony abnormalities, asymmetrical and unusual facial appearance, an atypical dermatoglyphic pattern, and a presumptive long-arm deletion of the Y chromosome. His early development apparently was not remarkable, but at school age he was aggressive and destructive. At 23 years of age he was institutionalized at a state mental hospital. Physical findings included obesity, a female habitus, soft skin, many ecchymoses on the trunk and lower extremities, chronic stasis dermatitis, varicose veins, microcephaly, prominent brow, saddle nose, high cheek bones, epicanthal folds, thick lips, gynecomastia, kyphoscoliosis, abdominal striae, a female escutcheon, small testes, and hyperextensible joints. He understood simple commands and spoke in short phrases using 1-syllable words. He was chromatin positive in 42 percent of the buccal cells. The karyotype

showed 16 chromosomes in the C group and an additional minute, submetacentric chromosome which was interpreted as a deleted Y chromosome. The minute chromosome was not familial since it was not found in male siblings. Dermatoglyphic studies showed the S was more similar to patients with Turner's syndrome. Since the genetic role of the Y chromosome is not yet fully understood, complete assessment of the cytogenetic variation found in this patient is not possible at this time. (27 refs.) - *R. Froelich.*

*Department of Medicine
University Hospital
Columbus, Ohio 43210

1811 ASPILLAGA, M., & CROSBY, L. A new Klinefelter's syndrome karyotype. *Lancet*, 2(7518):718, 1967. (Letter)

An unusual type of mosaicism was discovered in a 5-month-old, physically normal child with Klinefelter's syndrome. There was no history of consanguinity, drug ingestion, radiation, or miscarriages. Peripheral-blood culture yielded 72 analyzable cells: 2 with 45 chromosomes, 11 with 46 chromosomes, and 59 with 47 chromosomes. The mosaicism may be an aberration in the early somatic mitoses of the embryo. (No refs.) - *J. Snodgrass.*

Department of Genetics
Luis Calvo Mackenna Hospital
360 Antonio Varas
Santiago, Chile

1812 ROBSON, MARTIN C., SANTIAGO, QUIRICO, & HUANG, THOMAS W. Bilateral carcinoma of the breast in a patient with Klinefelter's syndrome. *Journal of Clinical Endocrinology and Metabolism*, 28(6):897-902, 1968.

A case of a 69-year-old Negro male displaying bilateral carcinoma of the breast and Klinefelter's syndrome (XXY configuration) is presented. The patient had normal urinary estrogen excretion, decreased 17-ketosteroid excretion, normal 17-hydroxycorticosteroid excretion, and increased gonadotropin excretion. Chromosomal studies and autopsy findings are included in the report. (15 refs.) - *Journal abstract.*

Brooke General Hospital
Brooke Army Medical Center
Fort Sam Houston, Texas 78234

1813 WELTER, D. A., GATZ, A. J., & SMITH, W. S., JR. Somatic crossover in Klinefelter's syndrome. *Lancet*, 2(7518): 725-726, 1967. (Letter)

Chromosomal rearrangement was observed in 3 of 500 blood-leukocyte cells from a 19-year-old Caucasian male (IQ 76). He had a teratoma in the anterior mediastinum, a mild scoliosis with spina bifida occulta, and a persistent hand tremor. Barr count was 46 percent and the modal chromosome number was 47. Analysis of the 3 cells with somatic crossover at metaphase revealed that the 2 chromosomes involved in this synapse were from group C. It is possible that the synapse occurred in early cleavage of the zygote and involved both X chromosomes (thus providing evidence for a nondisjunction mechanism) or that the synapse is a quadriradial structure resulting from the *in vivo* immunological response to the teratoma. (2 refs.) - *A. Clevenger.*

Department of Anatomy
Medical College of Georgia
Augusta, Georgia 30902

1814 HUNTER, H. Finger and palm prints in chromatin-positive males. *Journal of Medical Genetics*, 5(2):112-117, 1968.

An analysis of the finger and palm prints of the 15 males with chromatin-positive buccal smears (genotypes included 12 XXY, 2 XXYY, and 1 XXXY), when compared with data taken from the literature supports the hypothesis of the effect of an increased number of X chromosomes on dermatoglyphics. XXY males show an increased frequency of the simple arch pattern over normal controls (XY), a statistically significant smaller total digital ridge count (XO from the literature were greater), a significantly smaller *a-b* ridge count (XO were greater), and a more acute *atd* angle. (10 refs.) - *E. L. Rowan.*

Balderton Hospital
Balderton, Nr. Newark
Notts, England

1815 GORDON, R. R. Chromatin Positive males. *Clinical Pediatrics*, 6(9): 515-516, 1967.

The essential features of Klinefelter's syndrome, which can be clinically diagnosed only in adult life, include: eunuchoidism,

testicular atrophy, azoospermia, sparse facial hair, female distribution of pubic hair, and gynecomastia. Classical Klinefelter's patients are usually chromatin positive with the constitution XXY, but when chromatin negative, they are mosaics with XY/XXY. More than 2 X chromosomes or more than 1 Y may be found. Degree of retardation and related abnormalities are associated with higher numbers of X chromosomes. Buccal mucosal smears are indicated for all males who have multiple congenital malformations, MR, unusual height, and belligerency. (5 refs.) *J. Snodgrass.*

City General Hospital
Sheffield 5, England

1816 PRIEST, JEAN H., HEADY, JUDITH E., & PRIEST, ROBERT E. Delayed onset of replication of human X chromosomes. *Journal of Cell Biology*, 35(2,I):483-487, 1967.

The extra X chromosomes in human cell cultures from Ss with XY, XX, and XXX chromosomes incorporated tritium labeled thymidine (H_3TdR) during the first half of DNA synthesis; moreover, the subsequently unlabeled chromosome in XX cells was not found to be peripheral in metaphase position and did not differ significantly in length from other C chromosomes. Human cell lines in fibroblast cultures of XY, XX, and XXX configuration were synchronized using 5-fluoro-2' deoxyuridine to block DNA synthesis. Thymidine (TdR) or H_3TdR was then added at varied predetermined intervals to remove the block. After further treatment including TdR, vinblastine sulfate, and staining solution, the labeled metaphase of C chromosomes was studied. During the first 3 hours, or 1/2 the period of synthesis, XX and XXX cells were found not to have 1 or 2 C-group chromosomes incorporating H_3TdR. As synthesis progressed, the degree of unlabeling declined, possibly due to desynchronization or gradual labeling of those chromosomes not previously labeled. No significant difference during the center of metaphase was found in the distance from the centromere of the unlabeled X chromosome in XX cells and that of the other chromosomes of the C group, but an unlabeled peripheral DNA mass was found in the early phase of synthesis. This would indicate that the peripheral position of the unlabeled X chromosome during late prophase and early metaphase was not sustained. These findings would indicate that position cannot determine the late replicating X-chromosome. (8 refs.) - *E. Gaer.*

University of Colorado Medical Center
Denver, Colorado 80220

1817 DONER, JOEL M., FINKELMAN, AARON, & SORICELLI, RICHARD. Turner's syndrome. *Oral Surgery, Oral Medicine, and Oral Pathology*, 24(1):27-32, 1967.

During a routine oral surgery admission, Turner's syndrome was diagnosed in a 36-year-old married woman who exhibited the oral and facial features that occur in this disorder. She had been in good health but had primary amenorrhea and had never been pregnant during 6 years of married life. Examination showed shortness of stature, slight obesity, dorsal kyphosis, an increased carrying angle, absent breast tissue, absent pubic and axillary hair, an incurving of the fifth finger, and infantile genitalia. Oral and facial examination showed facial asymmetry, a short webbed neck, an extremely high palatal vault, hypoplastic mandible, depressed angles of the mouth, and slight microdontia. A bone skeletal survey showed a number of degenerative lesions and underdevelopment of the mandible. She was sex chromatin negative, and the karyotype was abnormal in that 1 sex chromatin was absent. The patient had excision of bilaterally impacted mandibular third molars. (2 refs.) - *R. Froelich.*

364 Franklin Street
Bloomfield, New Jersey

1818 FERRIER, PIERRE E., & FERRIER, SIMONE A. Turner's phenotype in the male. *Pediatrics*, 40(4,I):575-585, 1967.

Four male children with Turner's phenotype are described, 2 of whom were MR. They ranged in age from 9 to 14 years, and 1 had been followed since the age of 1 1/2 years. Features of Turner's syndrome included webbing of the neck and shield-like chest in

all, gonadal anomalies in 3, small stature in 2, multiple nevi in 2, cardiovascular malformations in 2, cubitus valgus in 2, facial anomalies in 2, and tibial exostosis in 1. The 2 with MR scored a full scale IQ of 79 and 47 respectively on the Wechsler Intelligence Scale for Children. The high ridge count and wide *atd* angle shown in 3 of the children via dermatoglyphic examination are consistent with findings in females with Turner's syndrome. One patient had a simian crease in each hand. Some evidence of testicular deficiency was present in 3, and a testicular biopsy in 1 showed thickening of the basement membrane of the tubules, absent Leydig cells, moderate fibrosis of the interstitium, and reduced spermatogenesis. No chromosomal abnormality or sex chromosomal mosaicism could be demonstrated despite extensive cytological investigation. A few cases in the literature of XO/XY mosaicism in males with Turner's phenotype have been found, but most do not show chromosomal abnormality. One possibility is a deletion too small for detection with current techniques and equipment. Another possibility is genetic transmission, but cases have been too sporadic to make any conclusions about this. (41 refs.)
R. Froelich.

Department of Pediatrics
University of Washington
Seattle, Washington 98105

Professional Services

1819 PATTERSON, WELDON. The part of the physical therapist in assisting cottage staff in a total habilitation program. Paper presented at the 91st annual meeting of the American Association on Mental Deficiency, Denver, Colorado, May 15-20, 1967, 8 p. Typed.

The role of the physical therapist is discussed in relation to the cottage life program within an institution. The efforts of the physical therapist are directed toward meeting the needs of the physically handicapped. No specific treatment technique can be applied to all cases, and each patient must be evaluated on an individual basis. Cottage life may improve if small units are organized to allow for individual care. Future institutions may be centers for the care and treatment of severely and profoundly retarded and physically handicapped individuals, while the mildly retarded are cared for within the community. The younger the child at time of physical therapy, the better the chances for habilitation. The physical therapist should give the therapy in the initial stages. As the treatments become routine, however, they can be turned over to a trained aid. Treatment involves attempts at self feeding, correct positioning of body, movement, and some type of activity. The treatment of the residents by the cottage staff is supervised by the physical therapist, a nurse, and a physician. The training of the cottage staff should involve at least 30 hours of lecture and work experience. (No refs.)
B. Bradley.

Cloverbottem Hospital and
School
Donelson, Tennessee

1820 KRISHEF, CURTIS, & LEVINE, DAVID L. Preparing the social worker for effective services to the retarded. *Mental Retardation* (*AAMD*), 6(3):3-7, 1968.

The field of mental retardation provides challenge and opportunities to those engaged in the profession of social work. To meet this challenge the profession will need to modify attitudinal misconceptions. Future training will need to be predicated on a view of mental retardation, by both faculty and administration of schools of social work, as a broad and important area for the provision of social service. The experience of one school in designing a curriculum that infused retardation content into all sequences is described. The integrity of generic social work and the use of authentic retardation content is achieved by the introduction of a "mental retardation anchor man" into the faculty. (7 refs.) - *Journal abstract.*

Florida State University
Tallahassee, Florida

1821 BETTE, MARIANNE. Summer work with the retarded. *American Journal of Nursing*, 67(6):1228-1229, 1967.

During the summer of 1966, under the auspices of the Student Work Experience and Training Program (SWEAT) of the U. S. Public Health Service Division of Mental Retardation, 700 high school and college students worked in 50 agencies throughout the United States caring for MRs. In relating her own part in this program, one of these students describes her gradual progression from shock, disbelief, and depression to understanding, acceptance, and an awareness of MRs as distinct individuals capable of personal development. (No refs.) - *J. Snodgrass.*

School of Nursing
Loyola University
Chicago, Illinois

1822 EBERHARDY, FRANCES. The view from "the couch." *Journal of Child Psychology and Psychiatry*, 8(3/4):257-263, 1967.

Counselors can best help parents of handicapped children by giving them support, treating them as partners in the job of helping their child, respecting their abilities and observations, and providing techniques which will help them deal with the child's atypical behavior. Counselors should adopt a personal, friendly attitude toward parents, discourage feelings of regret and guilt, examine the past only for the purpose of improving the future, and work toward improved parent and child adaptation. Parents need to be made aware of the wide range of possible causes or combinations of causes which may foster handicaps of an emotional nature, such as autism, in children. Counseling methods that arouse parent guilt and do not provide concrete suggestions may lead to resentment, fear, loss of self-confidence, and inability to cope with problems. Parents of emotionally disturbed handicapped children do not bear out Bruno Bettelheim's statement that "The precipitating factor in infantile autism is the parent's wish that his child should not exist." (2 refs.) *J. K. Wyatt.*

457 Toepfer Avenue
Madison, Wisconsin 53711

Miscellany

1823 ABELSON, PHILIP H. Who shall live? *Medical Science*, 18(11):38-44, 1967.

Numerous complex problems are associated with the increased ability to keep people alive, the ability to detect and treat inborn errors of metabolism, and the future possibility of altering genetic makeup. Effective health measures have helped produce a population explosion that threatens to convert the earth into an overcrowded slum and a place of famine. Scientific advances in medicine now make it possible for the doctor to prolong the life of certain sick people. This produces a serious ethical problem that has no easy solution. Although the discovery and relatively easy detection of PKU led to mass screening programs in the United States, now as the social, emotional, and financial implications become evident, some second thoughts have arisen. These include apprehensions about political control of the practice of medicine through legislation based on fragmentary information, the high financial cost of a mass screening operation, and unrealistic expectation regarding treatment. Moreover, the Guthrie test gives 85 percent false positives, which often cause parental trauma. In view of these problems, the great effort to save all PKU babies and the push to eliminate the PKU recessive seem ill-advised. Genetic improvement for the future could employ sperm banks and restriction of the right to have children; there is, however, much resistance to these ideas. The future and destiny of man will depend on the decisions made in this area. (9 refs.) - *R. Froelich.*

Carnegie Institution of Washington
Geophysical Laboratory
2801 Upton Street, N. W.
Washington, D. C. 20008

1824 SAGARRA, J. SOLE. Aspectos otoneurooftalmologicos en pediatria. (Otoneurophthalmologic aspects in pediatrics.) *Acta Paedopsychiatrica*, 34(7/8):219-236, 1967.

This article, based upon the 20-years' experience of the author as chief of the Neuro-Psychiatric Department of the Chair of Pediatrics in Barcelona, is divided in a neurophthalmologic, an otoneurologic and a neurolaryngologic part. Personal cases are described of phakomatosis (particularly the Sturge-Weber syndrome), amaurotic idiocy, craniosthenosis, neuromyelitis optica, encephalitic parasitosis, cranial traumatisms, brain tumors, toxoplasmosis, congenital cerebral malformations, ocular tics, congenital nystagmus, vertigo, deafness, cerebral trombosis, aphasia, mutism, disphonia and other syndromes and disease entities. The author emphasizes the clinical orientation of his work. (14 refs.) - *Journal summary.*

c. Muntaner
187 bis
Barcelona, Spain

1825 SCHMIDT, M., & DAUDET, G. Action du Benzpéridol (8089 CB soluté buvable dosé à 0,2 mg/ml) sur les troubles du comportement d'un groupe d'enfants suivis dans un service de débiles profonds. (Action of Benzperidol (8089 CB a drinkable solute given in the concentration of 0.2 mg/ml) on the behavior of a group of institutionalized mentally retarded children.) *Annales Medico-Psychologiques*, 126, Part 1(1):113-119, 1968.

The effects of weak and prolonged doses of Benzperiodal on the behavior of 120 MR children (mean CA, 12 yr) were determined. Treatment was conducted for several months at an average daily dose of 0.50 mg. Improvement in behavior and in psychomotor development was apparent. The drug appeared to release an inhibition and to enable motor development to continue. No harmful side effects were observed. (No refs.) - *S. Katz.*

Clinique Psychiatrique
Centre Hospitalo-Universitaire
de Strasbourg
Strasbourg, France

1826 Heart failure traced to overgrown adenoids. *Medical World News*, 8(45):46-47, 1967.

A 3-year-old boy who appeared MR and had congestive heart failure was found to have an airway obstruction from hypertrophic adenoids, the treatment of which resulted in relief of the cardiac and mental symptoms. He presented with anemia and possible pneumonia and had a history of difficult breathing, chest colds, and a running nose. He improved following penicillin treatment but shortly thereafter he developed congestive heart failure and went into semicoma. Arterial blood carbon dioxide tension was highly increased and adenoids were found to be markedly enlarged. Abnormally small jaws prevented him from compensating by mouth breathing. During cardiac catheterization he showed severe pulmonary artery hypertension and hyperactivity to oxygen deficiency. After passage of a nasopharyngeal tube the response was immediate. His enlarged adenoids were removed and he began developing normally. He appeared bright and cheerful for the first time in his life, and he showed no apparent permanent mental damage 4 months later. Although the diagnosis of this condition is difficult, right ventricular hypertrophy, congestive cardiac failure, stridor, intermittent somnolence, and hypercapnea provide keys to the recognition of the disorder. (No refs.) *R. Froelich.*

1827 VIERUCCI, A., *BLUMBERG, B. S., LONDON, W. T., & SUTNICK, A. I. A new precipitating antigen-antibody system (Pennsylvania antigen) in human serum. *Lancet*, 1(7554):1213-1217, 1968.

A new precipitin system is reported. The precipitating antibodies are directed against a rare serum-antigen system termed tentatively Pennsylvania antigen (Pe). It has been detected in 0.35 percent of 2,846 sera tested. The antibodies were found in the sera of 18 percent of 302 Down's syndrome patients and in 4 of 22 patients with chromosome anomalies other than Down's syndrome. With the exception of 2 cases, they were not found in the sera of a variety of healthy and diseased individuals. The Pe antigen is almost entirely restricted to patients affected with hematological disorders, including leukemia, thalassemia, and

Fanconi's anemia. It was also detected in the cord blood of a newborn baby with Down's syndrome, 1 human fetal serum, cow's milk, and fetal and newborn calf serum. The antigen differs from known human fetal and adult serum-proteins. Two serological specificities have been shown in some of the Pe(+)sera. (34 refs.) - *Journal abstract.*

*Institute for Cancer Research
Fox Chase
Philadelphia, Pennsylvania 19111

1828 SCHNYDER, U. W., WISSLER, H., & WENDT, G.G. Eine weitere form von atypischer erythrokeratodermie mit schwerhörigkeit und cerebraler schädigung. (An additional form of atypical erythrokeratodermia with deafness and cerebral damage.) *Helvetica Paediatrica Acta*, 23(3):220-230, 1968.

The case of an EMR girl presenting an erythrokeratodermia combined with labyrinthine deafness, psychic and somatic retardation and motoric problems illustrates that this combination of symptoms has to be differentiated from the erythrokeratodermia figurata variabilis Mendes da Costa as well as from other types of erythrokeratodermia. The chromosome karyotype was normal; the vitamin-A-serum level was decreased. The skin-lesions improved only after application of an ointment containing vitamin A acid. No evidence of another metabolic disorder could be detected. (23 refs.) - *Edited journal summary.*

Universitatshautklinik
D 69 Heidelberg
Federal Republic of Germany

1829 INOUYE, EIJI, KAMIDE, HIROYUKI, IHDA, SHIN, IZAWA, SHUJI, TAKUMA, TAKETOSHI, MASAKI, TAKEO, MORISHITA, HARUMI, ETO, MORIHARU, UMEGAKI, MARI, & KADA, MICHIKO. Effect of bovine brain hydrate on mentally retarded children: A multidisciplinary clinical experiment using co-twin control. In: Tokizane, T., & Schade, J. P., eds. *Correlative Neurosciences.* (Progress in Brain Research Series, Volume 21B.) New York, New York, American Elsevier, 1966, p. 1-39.

Some improvement in behavior may have resulted from administration of bovine brain hydrate (Ceremon) to 6 borderline MR children. The Ss were 6 pairs of monozygotic twins (CA, 8 yr, 10 mo to 12 yr, 1 mo) who were selected from 1,948 pairs of twins in Tokyo. One of each pair of twins was given Ceremon for 1 year while the other twin was given a placebo by the double blind method. After 1 year both twins were given placebo for another year. Examinations conducted during the 2-year period included electroencephalogram, clinical observation, blood and urine tests, X-rays, intelligence tests (Suzuki-Binet and WISC), anthropometry, motor ability test, and social adaptability test. Monozygosity was established by blood typing and other tests. The IQ was 60 or standard deviation (sd) 30 in one twin and 70 or sd 35 in the other. The drug was given orally at a dose of 7 to 12 tablets daily. Comparison with the control twins revealed behavioral and physical improvement in 4 of the drug recipients (D). Three of the Ds continued to show this tendency after administration was discontinued. The development of inhibitions of hyperkinesis increased in the Ds. The Ds also showed increased achievement in various school subjects. Bovine brain hydrate may have a selective effect in the improvement of brain maturation or development. The findings in this study are not conclusive and contain no proof that the results are not due to chance. (14 refs.) - *R. Froelich.*

Institute of Brain Research
University of Tokyo School of Medicine
Tokyo, Japan

1830 KALTER, HAROLD. Teratology of the central nervous system. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development.* New York, New York, Grune & Stratton, 1967, Chapter 9, p. 148-152.

Experimental mammalian teratologists have studied (1) various aspects of prenatal development in order to identify the multifactor etiologic bases of human congenital malformation and (2) the embryological development of laboratory animals with induced congenital abnormalities in order to chart the morphogenesis of these defects. Great variability in response to teratogens has been found both between and within species. Recent findings supporting the importance of microenvironmental or peristatic influences as mitigators or aggravators of the effects of major disturbance indicate that studies aimed at model development ought to investigate the interlaced developmental influences of heredity, the macroenvironment, and the microenvironment. Embryological studies have revealed that similar defects may be

the result of different pathways, thus making it possible to distinguish between greatly similar defects in order to identify defect-specific characteristics. These studies have been used to investigate the hierarchical relations of the different defects of a syndrome, to draw parallels between the development of hereditary and induced abnormalities, to clarify ontogenetic questions, and to clarify the regulatory role of the central nervous system. (18 refs.) - *J. K. Wyatt.*

1831 SKAKKBAEK, N. E., PHILIP, J., & RAFAELSEN, O. J. LSD in mice: Abnormalities in meiotic chromosomes. *Science*, 160 (3833):1246-1248, 1968.

Meiotic chromosomes of 6 mice injected with high doses of lysergic acid diethylamide (LSD-25) and of 6 controls were studied. Several breaks, gaps, and unidentifiable fragments were found in the treated but, with a few exceptions, not in the control animals. Secondary constrictions were more numerous in the treated than in the untreated mice. Possible consequences are discussed. (9 refs.) - *Journal abstract.*

Rigshospitalet
University of Copenhagen
Copenhagen, Denmark

DEVELOPMENT

Physical, Emotional, and Social

1832 BAYLEY, NANCY. Developmental problems of the mentally retarded child. In: Philips, Irving, ed. *Prevention and Treatment of Mental Retardation.* New York, New York, Basic Books, 1966, Chapter 8, p. 85-110.

Research findings from the Berkley Growth Study which have particular relevance for MR include evidence of the developmental importance of (1) the emotional climate in which an infant develops, particularly male infants, and (2) changes in intellectual functions which occur from the second to the third year. Although boy babies of happy, loving mothers had low intelligence test scores during the first year of life and those with hostile mothers had high scores, by the time the children reached age 5 these IQ patterns had undergone a gradual reversal which was still evident at the time of the last testing at age 18. Girls' IQ scores appeared to be related to maternal behavior in infancy, but school-age scores were almost completely independent of early maternal behavior. During the second to third year language should develop, communication between the child and others should be established, mental growth should enable the child to form stable response-tendencies and motivational orientations, and development should have progressed to a point where there is evidence of increased motor control, competence in self-care, and ability to carry out simple requests. Developmental progress during this period appears to be crucial for later intellectual ability. These findings suggest a complex process of interaction between inherited potential and environmental pressures and indicate that intellectual development is dependent on the impact of the environment on the individual and on his genetic potential. (25 refs.) *J. K. Wyatt.*

1833 ELMER, ELIZABETH, & GREGG, GRACE S. Developmental characteristics of abused children. *Pediatrics*, 40(4,I):596-602, 1967.

From 1949 to 1962, 50 children admitted to Children's Hospital of Pittsburgh were discovered to be suffering physical abuse. When 20 of these children were treated, reevaluated, and unanimously judged to be abused, it was concluded that critical attention must be paid to environmental and cultural factors and that early intervention should be considered when abuse is suspected. The criteria for selection of these children were: (1) multiple bone injuries, (2) absence of clinical disease to account for these injuries, and (3) a history of assault or gross neglect. Nineteen of the 50 children were unavailable for follow-up study because of: death from intracranial trauma (3), death from malnutrition (1), death at the hands of the mother (2), death from unknown causes (2), admission to institutions for the MR (5), or refusal to participate (6). At follow-up examination,

326-070 O - 68 - 7

complete pediatric, psychiatric, psychologic, and audiometric studies were made. The Ss' socioeconomic status was low. More than 1/2 were under the third percentile in weight, and 6 had signs of CNS. The IQs ranged from 52 to 103, with 1/2 scoring below 80. None were severely retarded. Seven had physical defects related to their old injuries, and 8 were emotionally disturbed. All but 1 were under 40 months of age when they received bone injuries. Nine children had significant past medical histories, and 6 of these were MR. Fifty percent were MR despite improved environments and recovery from growth failure. The serious outcome of so many children makes evaluation, management, and follow-up very important. (12 refs.) - *R. Froelich.*

Children's Hospital of Pittsburgh
125 DeSoto Street
Pittsburgh, Pennsylvania 15213

1834 SINGER, JUDITH E., WESTPHAL, MILTON, & NISWANDER, KENNETH R. Sex differences in the incidence of neonatal abnormalities and abnormal performance in early childhood. *Child Development*, 39(1):103-112, 1968.

Data from the Collaborative Study of Cerebral Palsy were analyzed for sex differences in physical, psychological, and neurological development from birth to 4 years of age. Significant sex differences, showing the male to be at a disadvantage, were found in performance on all scales. The possibility that these differences in performance were related to neonatal experience was supported by the finding of significant sex differences in neonatal condition. Males, although they have the advantage of higher birthweight, do less well than females from birth through 4 years of age. Although these sex differences must have a basic genetic origin, it was suggested that such factors as obstetrical problems, neonatal distress, and maternal attitudes may have a mediating effect. Possible etiologic mechanisms were discussed. (29 refs.) *Journal abstract.*

Buffalo's Children's Hospital
219 Bryant Street
Buffalo, New York 14222

1835 ANDERSON, V. ELVING, SIEGEL, FELICIA S., TELLEGEN, AUKE, & FISCH, ROBERT O. Manual dexterity in phenylketonuric children. *Perceptual and Motor Skills*, 26(3,I):827-834, 1968.

Three groups of children (12 phenylketonuric Ss, 12 nonphenylketonuric matched controls, and a normative group of 72 elementary school children) were given a series of 5 manual dexterity tasks. Taken as a group the performance of the phenylketonuric Ss did not differ from their matched controls. When the phenylketonuric group was divided into 2 subgroups (on or off diet), Ss on diet did not differ significantly from their controls, but Ss off diet performed significantly more poorly than their controls. (4 refs.) - *Journal abstract.*

University of Minnesota
Minneapolis, Minnesota 55455

1836 STERNLICHT, MANNY. Dreaming in adolescent and adult institutionalized mental retardates. *Psychiatric Quarterly Supplement*, 40(1):97-99, 1967.

When 120 MR adults and adolescents were asked to relate their dreams, no significant differences of frequency or content in relation to sex or age were shown. The Ss included 60 institutionalized adolescents (CA, 12-20; IQ, 50-69) and 60 institutionalized adults (CA, 21-49; IQ, 50-69). Sex distribution was equal. Each S was asked to relate any dreams he had had in the past week. If he had no dreams during the week, he was asked to relate any dreams he had had in his lifetime. The adolescent MRs had slightly more dream activity (58 percent) and tended to have more dreams about returning home to their families. Most of those who reported no dreams within the past week also denied ever having a dream. Forty percent of the adults reported dreams. The content was of a simple and undisguised nature with a minimum of symbolism. Aggressive content was not common (9-13 percent), although some Ss reported "monsters" or "spooky" dreams. The theory that dreams function as wish fulfillments was supported in this study by the common theme of returning home to one's family. In contrast to reported findings in a

normal population, where men had more aggressive content than women, this study revealed no significant sex differences in frequency or in content. (4 refs.) - *R. Froelich.*

Willowbrook State School
Staten Island, New York 10314

1837 EDMONSON, BARBARA, HENRY, LELAND, DE JUNG, JOHN E., & LEACH, ETHEL M. Increasing social cue interpretations (visual decoding) by retarded adolescents through training. *American Journal of Mental Deficiency,* 71(6):1017-1024, 1967.

A curricular unit, designed to illustrate for the retarded the cultural modes of information exchange via signals, was given trial at junior high school prevocational level in special education classes. Gains in social signal decoding, as measured by the Test of Social Inference, by pupils in experimental classes exceeded those by pupils in placebo classes and in a no treatment group. Evidence of social behavioral encoding gains, as indicated by differences between pre- and post-treatment ratings of social behavior by pupils' teachers, is less clear. Experimental class pupils, more frequently than pupils in other classes, received post-treatment ratings of social behavior higher than their pre-ratings. (11 refs.) - *Journal abstract.*

University of Kansas Medical Center
Rainbow Boulevard and 39th Street
Kansas City, Kansas 66103

1838 JACOBS, JOHN F., & PIERCE, MARNELL L. The social position of retardates with brain damage associated characteristics. *Exceptional Children,* 34(9):677-681, 1968.

In a study to determine why some children are rejected by their peer groups, 155 children in 12 classes for EMRs were divided into 2 types on the basis of 4 or more characteristics commonly associated with brain damage (specific learning disability; perceptual motor deficit; general coordination deficit; "soft" neurological signs; Wechsler Intelligence Scale for children patterns I, II, or III; abnormal EEGs; or seizures). Children were asked to note which child in their class they would like to play with most, like to work with most, like to play with least, and like to work with least. "Brain damaged" children with more than 4 characteristics significantly were more often rejected and least often selected than those with 3 characteristics or less by all children, including those with the same characteristics. Children most often rejected had short attention span (90 percent), hyperkinesis (76 percent), emotional lability (72 percent), and impulsivity (72 percent). Correlation with IQ was not significant. (16 refs.) - *E. L. Rowan.*

Utah State University
Logan, Utah 84321

1839 SEGAL, ARTHUR. Some observations about mentally retarded adolescents. *Children,* 14(6):233-237, 1967.

Retarded young people have much the same problems as normal adolescents, but the retardates' difficulties are complicated by their retardation and the attitudes of the adults around them. The mildly retarded, who sense their difference but do not wish to admit to retardation, are more strongly motivated to live a normal adult life and more angry at not being able to do so than are the moderately and severely retarded, who do not have as clear an idea of what being an adult entails beyond the fact that it means not being a child. Misguided parents, often as confused as their offspring regarding the meaning of adulthood in relation to MR, often augment the difficulties of the MR adolescent by: (1) encouraging exaggerated expectations in the mildly retarded, (2) refusing to admit that their child has a handicap, or (3) preventing the moderately or severely retarded child from reaching his highest level of maturity because they fear what "growing up" will mean to him. It is most important that both parents and professionals recognize that the retarded young person is both an adolescent struggling for maturity and an individual with a unique personality and special potentials. (7 refs.) - *E. F. MacGregor.*

School of Social Welfare
University of California
Berkeley, California

1840 HOUILLON, G., SAMULAK, G., & HOUILLON, P. Essai sur la structure du groupe chez certains oligophrénes profonds. (An essay on the group structure of mentally retarded subjects.) *Annales Medico-Psychologiques*, 126, Part 1(1):123-126,1968.

Observations of elementary social reactions within a group of 30 MR Ss (CA, 13-45 yr; IQ <55) indicated the complexity of their relationships. There seemed to be no correlation between intelligence, coordination, or physical condition and authority exhibited by one peer over the rest. The leader, with whom fellow peers could more easily identify, had more influence over the group than did the physician or monitor. Newcomers to the group were not rejected but were received with curiosity and a willingness to help. Ideal occupational groups consisted of 14 heterogeneous members. Upon completion of the study, the groups were quite cohesive and the monitor had assumed leadership of the group. The MR searches for familiar security within the group whose inter-relationships are entirely different from those within a normal family. Since the normal adult only sees MR behavior in terms of his own relationships with other normal adults, it is suggested that the MR be studied with respect to normal children with the same MA. (No refs.) - *S. Katz.*

No address

1841 CHAMBERS, WILLIAM R. Use of social competence devices in programs for the mentally retarded. In: Scheerenberger, R. C., ed. *Training the Severely and Profoundly Mentally Retarded.* (*Mental Retardation in Illinois*, Monograph Supplement #3.) Springfield, Illinois, Department of Mental Health, 1967, p. 47-54.

The role of social competency devices in establishing programs for the MR is described in terms of their value in goal setting and evaluation relating to training activities. The empirical nature of these instruments may provide a valid and reliable basis for evaluating progress in programs designed to improve social functioning as well as for establishing appropriate training activities. The retardate can be aided in attaining social adequacy if teaching activities are adapted to his functional level, if important aspects of social activity are stressed, and if individualized experiences are provided at an appropriate rate. The oldest device for assessing social competency is the Vineland Social Maturity Scale, which was published in 1935. It is divided into primary areas of (1) self-help general, (2) self-help eating, (3) self-help dressing, (4) self-direction, (5) occupation, (6) communication, (7) locomotion, and (8) socialization. The few items at each level, the probability that the 8 areas are not independent, and the fact that similar items do not appear at each age level discourage pattern analysis. However, some of the marked discrepancies occurring during the child's development can be identified. The Residential Development Check List provides assessment of a child's development in self-care, motor development, social maturity, language, personality, and occupational maturity. Although this is a non-normative scale, the average ages for completion of items are given. The Cain-Levine Social Competency Scale offers a 44-item scale divided into the subscales of self-help, initiative, social skills, and communication. The TMR Performance Profile provides one of the most comprehensive scales for measuring elements of social competence. Its value lies in describing behavior in meaningful dimensions for the teacher. (12 refs.) *B. Bradley.*

1842 HAMMER, S. L., WRIGHT, L. S., & JENSEN, D. L. Sex education for the retarded adolescent: A survey of parental attitudes and methods of management in fifty adolescent retardates. *Clinical Pediatrics*, 6(11):621-627, 1967.

The results of an oral questionnaire answered by the parents of 25 MR boys and 25 MR girls (CA, 11-21 yrs) concerning parental methods of sex education, management of sexual behavior, and attitudes toward marriage and reproduction for their own MR child revealed that: (1) 88 percent of the girls had been prepared for their sexual changes and menarche by their mothers or foster mothers; (2) only 8 percent of the boys had received sex education from their parents; (3) there was a very low incidence of sexual problem behavior and a lack of severe management problems for both boys and girls; (4) the parents of 62 percent of the MRs considered marriage to be a possibility for their child; and (5) 70 percent of the parents, including those of all the girls, considered the prevention of reproduction to be imperative for the health and adjustment of their child. The more socially acceptable and

older MRs were considered to have better marriage possibilities than younger, more limited MRs. Twenty-four percent of the families had attempted to arrange for either medical contraception or sterilization. In spite of the low incidence of sexual misbehavior, parents evidenced high anxiety about its possibility and indicated a need for professional counseling and guidance concerning the adolescent development of their MR children. (12 refs.) - *J. K. Wyatt.*

University of Washington
Seattle, Washington 98105

1843 THOMPSON, DORIS S. Remotivation to motivation. *Canadian Nurse*, 63(7): 32-35, 1967.

Sixty 1-hour group therapy sessions with 5 profoundly retarded children increased social and emotional responses and intensified awareness of environment. The study used a 5-phase technique. In phase 1, the "climate of acceptance," the remotivator met with each child, called him by name, and encouraged him verbally and physically to join the group. In phase 2, the "bridge to reality," the children, while traveling from ward to play area, were encouraged to respond to all changes in environment. Phase 3 consisted of "sharing the world we live in" through stimulation of the 5 senses. In the fourth phase, "appreciation of the work of the world," the children were encouraged to prepare for play, assist others in preparation, and help clean up afterward. In the final phase, called "climate of appreciation," the remotivator said good-bye to each child by name and encouraged each one to give a vocal or physical response. A revised Rosenzweig Behavior Profile was inadequate as a measure of resulting behavior changes. (No refs.) *E. F. MacGregor.*

The Children's Psychiatric
Research Institute
London, Ontario, Canada

1844 MORRISON, DELMONT, MEJIA, BERTA, & MILLER, DALE. Staff conflicts in the use of operant techniques with autistic children. *American Journal of Orthopsychiatry*, 38(4):647-652, 1968.

The use of food as a reinforcer in the operant conditioning of a 6-year-old autistic boy in-patient caused multiple conflicts among ward and research personnel. The experiment was viewed by some as impersonal scientific methodology and by others as a punitive last resort. Conflict resulted from the preexperimental tension-reducing set of meals. Feeling the need to respond with more food to comfort the crying child, the nurses thus engendered in themselves anger and guilt which the child could take advantage of to augment ambivalent feelings on the part of personnel. The ward staff also felt conflict in reassuring the parents while following a protocol with which they could not agree. The research staff, too, found itself reacting emotionally rather than rationally when, for example, the boy reacted bizarrely to change in model personnel but continued to show positive response to conditioning. The staff learned to appreciate the effect of negativism on learning and developed a feeling for the autistic child as a person. Emphasis was placed on the need for communication to work out difficulties within the limits of ward and research programs. (10 refs.) - *E. L. Rowan.*

University of California
Medical Center
San Francisco, California 94122

1845 CLAUSEN, JOHS. Assessment of behavior characteristics in mental retardates. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development.* New York, New York, Grune & Stratton, 1967, Chapter 15, p. 270-281.

Physiological, sensory, motor, perceptual, and complex mental functions data obtained from normal and MR Ss during studies at Vineland Training School (Vineland, New Jersey), coupled with the difficulty encountered in establishing differential clinical or functional subgroup performance levels for MRs, suggest the operation of a general factor in all MRs regardless of clinical category. This factor, characterized by a central function impairment, affects the degree rather than the kind of performance on all tasks. Although data on the arousal mechanism in relation to the reticular formation lack experimental human evidence and need modification and refinement, it is possible that impairment of the arousal mechanism may provide the psychophysiological substrate for the MR behavior pattern revealed by these studies. The populations from whom data on 50 variables were obtained were: 112 normal Ss aged 8 to 10 years, 68 MR Ss aged 8 to 10 years, 103 MR Ss aged 12-15 years,

and 105 MR Ss aged 20 to 24 years. IQs for the MR groups ranged from 40 to 75. When the performance of all MRs, regardless of age, was compared with that of the normal Ss, an MR ability profile emerged which consisted of groups of tasks on which MR performance was either less efficient, poorer, or as good as that of normal Ss. Differences in performance level between clinical subgroups were significant only when extreme categories were compared. Inverse factor analysis was used to define functional subgroups. Only 60 percent of the MR Ss could be assigned to the 3 syndrome groups established. The findings of complex mental functions evaluations support an interpretation based on impairment of integrative ability. It is speculated that arousal may be one prerequisite for integration. (24 refs.) - *J. K. Wyatt.*

1846 BURDOCK, EUGENE I., & HARDESTY, ANNE S. Contrasting behavior patterns of mentally retarded and emotionally disturbed children. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development.* New York, New York, Grune & Stratton, 1967, Chapter 20, p. 370-386.

The behavioral criteria of the Children's Behavior Inventory significantly distinguish between MR and mentally ill boys of the same age. A pilot-study comparison of the total and subtest scores of hospitalized physically ill, mentally ill, and EMR boys, 9 and 10 years old, who were matched for Negro-White ratio and fathers' occupational level revealed that (1) the total scores of mentally ill Ss were about 3 times greater than the similar total scores of physically ill and MR Ss, and (2) there were distinctive differences between the across subtest patterns of mentally ill Ss and those of the other groups. Evidence of incongruous ideation, perceptual dysfunction, or self depreciation was absent for physically ill and MR Ss and was elevated for mentally ill Ss. All groups were scored for conceptual dysfunction, incongruous behavior, and lethargy-dejection, but the scores of mentally ill Ss were elevated. Mentally ill Ss received the highest scores on the physical complaints, while MR Ss received no scores on this subtest. Additional research with larger and more representative samples should include cognitive assessment instruments and controlled observational measures. (28 refs.) *J. K. Wyatt.*

1847 SABATINO, DAVID A., & CRAMBLETT, HENRY G. Behavioral sequelae of California Encephalitis Virus infection in children. *Developmental Medicine and Child Neurology,* 10(3):331-337, 1968.

An extensive psychological study was made on 14 children after their hospitalization for California Encephalitis Virus infection. The behavioral examination was made between 7 months and 2 years after the initial hospital admittance and on routine clinical examination the children appeared to be functioning normally. This is in sharp contrast with the picture they presented when in the hospital, with high fever, seizures, and severe headaches, and when some were comatose or semi-comatose. The data from the behavioral studies indicated that the children had severe auditory and visual perceptual problems. There seemed to be no disturbance of higher language skills. A definite personality dimension was also reported, with school failure as a severe threat. (11 refs.) - *Journal summary.*

Departments of Education and Psychology
Catholic University of America
Washington, D. C. 20017

1848 OSWIN, MAUREEN. *Behaviour Problems Amongst Children with Cerebral Palsy.* Bristol, England, John Wright & Sons, 1967, 93 p. $4.85.

In assessing the problems involved in cerebral palsy (CP), literature on behavior disorders is reviewed and types of behavior problems are separated into 2 broad but interrelated categories--outward and inward behavior problems. Most writers agree that some behavior disorder is characteristic of children with brain damage. The possible etiology of these behavior problems and their results are described as well as the role of CP in causing these difficulties. The effects of the environment are considered with special reference to problems of children who are hospitalized for long periods. Most of the children have multiple handicaps which create the psychological disturbances so distressing for them. These may be demonstrated by displays of frustration, depression, withdrawal, fatigue, and inner distractions. Broken homes can be a major cause of various behavior problems, and prolonged institutionalization without adequate stimulation can lead to retardation of all aspects of the child's development.

Shock, guilt, and emotional, physical, and financial strain are some of the effects a handicapped child may have on the family. Major concerns in the education of the CP are consideration of the whole child, self-acceptance by the child, good home contact, and adaptation of teaching methods to the individual child (even though the general principles of education for CP children are the same as for normal children). Social development should be assisted by practical techniques. (33 refs.) - *B. Bradley.*

CONTENTS: The Background; The Problem; Some Causes and Consequences; Some Solutions.

1849 ESSER, ARISTIDE H. Dominance hierarchy and clinical course of psychiatrically hospitalized boys. *Child Development,* 39(1):147-157, 1968.

Patient contact rank order, quantitatively defined, reflects the dominance hierarchy in a psychiatric treatment cottage. The patient's position in this hierarchy was correlated with staff impressions of his behavior and with clinical variables. Diagnosis correlates with contact rank order: children with primary behavior disorders rank highest; brain-damaged children rank lowest. Children in the upper 1/2 of the rank order appear to have a better prognosis than those in the lower 1/2, both in incidence of discharge and in average time spent in the hospital. A high contact rank-order position is positively related to ward privileges and to school social adjustment. Clinically relevant insight, obtained from geographic mapping and from the patient's rank order in his peer group, may be used to test treatment hypotheses, especially attempts at resocialization. (7 refs.) *Journal abstract.*

Research Center
Rockland State Hospital
Orangeburg, New York 10962

1850 RUTTER, MICHAEL, GREENFIELD, DAVID, & LOCKYER, LINDA. A five to fifteen year follow-up study of infantile psychosis: II. Social and behavioral outcome. *British Journal of Psychiatry,* 113(504):1183-1199, 1967.

Five-to 15-year follow-up on a group of 63 children with infantile psychosis showed poor social and behavioral characteristics in comparison to those of controls. The selection, matching, and description of samples was described in a companion paper. All Ss attended the Maudsley Hospital Clinic (London, England) between 1950 and 1958. They were individually matched for age, sex, IQ, and year of attendance. The mean age at follow-up was 15 years, 7 months for the psychotic children and 16 years, 5 months for the controls. Follow-up included a neurological and psychiatric examination and psychological tests (WISC, WAIS, Peabody Picture-Vocabulary Scale, Schonell Graded Word Reading Test, or the Vineland Social Maturity Scale). Over 1/3 of both groups were in long-stay hospitals at time of follow-up. Many more control Ss were in paid employment. Social adjustment was rated as poor or very poor for 61 percent of the psychotics and for 36 percent of the controls. Those children who had an IQ below 60 or who were untestable had a very poor outcome ($<p.01$). Such behavior as autism, withdrawal, disturbed relationships, and aggression tended to improve or disappear during the course. Speech retardation, morbid attachments and preoccupations, non-adaptability, and obsessive phenomena did not improve as frequently and many times such behavior developed during the follow-up period. The 4 main variables related to outcome were IQ, speech, severity of disorder, and amount of schooling. The child's response to IQ testing probably was the most important indicator. The overall outcome of these patients was similar to that found in Kanner's longitudinal study. There are grounds for limited optimism if better facilities are available. (22 refs.) *R. Froelich.*

Institute of Psychiatry
Maudsley Hospital
London, S. E.5, England

1851 FREEMAN, ROGER D. Emotional reactions of handicapped children. *Rehabilitation Literature,* 28(9):274-282, 1967.

The handicapped child's emotional development may be more significant in his social adaptation than the physical handicap itself. For example, early diagnosis of a handicapping disorder has proved to be a mixed blessing, since labeling can distort parental attitudes, and misdiagnosis can be tragic. Because the infant becomes a psychological extension of the parent, the handicapped child may produce inappropriate parental concern, frustration, distortions, and attitudes. The usual conflicts of

development are inevitably more difficult, restricting the handicapped child's social adjustment. An understanding of the basic differences between adults and children is necessary before work with handicapped children can be accomplished. Aspects of the handicap that are relevent to emotional reactions include the severity, age of onset, duration, course, "visibility," and involvement of the CNS. Some criteria for referral to a psychiatrist include suicidal risk, severe withdrawal or depression, self-punitive behavior, regressive behavior, acting out, severe separation anxiety, resistance to habilitative measures, incipient psychosis, and differential diagnostic problems. Although amenability to treatment is not well-established with regard to emotional disturbances in handicapped children, it appears to be greater than is implied by the pessimistic attitude of many workers. (26 refs.) - *R. Froelich.*

Handicapped Children's Unit
St. Christopher's Hospital
for Children
Philadelphia, Pennsylvania

1852 PHILIPS, IRVING. Children, mental retardation, and emotional disorder. In: Philips, Irving, ed. *Prevention and Treatment of Mental Retardation.* New York, New York, Basic Books, 1966, Chapter 9, p. 111-122.

MRs are especially vulnerable to the development of personality defects which are the result of both constitutional endowment and interpersonal experiences with the environment and which are of the same type as those occurring in children with normal intelligence. Maladaptive behavior is usually more related to delayed, disordered personality functions than to limited intellectual capacities. Factors that affect the emotional stability of MRs diagnosed early in life are dependence on the family, the interpersonal reactions of the parents to the MR, deprivation experiences, developmental delay, and late school entrance. The personality development of the 85 percent of the MRs classified as mildly retarded and diagnosed at school age is affected by parental indifference and apathy, culturally developed distrust and suspicion, and socio-cultural isolation. This group includes those whose MR is primarily related to social, cultural, and psychologic factors. MRs need special help with personality development, which should include early and good interpersonal relationships and a range of opportunities for personality growth. (9 refs.) - *J. K. Wyatt.*

1853 SZUREK, STANISLAUS A., & PHILIPS, IRVING. Mental retardation and psychotherapy. In: Philips, Irving, ed. *Prevention and Treatment of Mental Retardation.* New York, New York, Basic Books, 1966, Chapter 14, p. 221-246.

Psychotherapy has been successfully used to reduce or prevent emotional disorders which may inhibit learning, distort development, and impair social adaptation in MR and pseudo-MR children. The treatment methods used with MR children are the same as those used with children of normal intelligence; they are aimed at helping the child express conflictive or distorted feelings which have resulted in self-defeating behavior and in the reduction of energy available for the learning of skills. During psychotherapy, feelings are expressed in words or play rather than in action. Psychotherapy may also be used with parents who are disturbed by signs of MR or by deficiencies in their infant or young child and with the parents of an MR child receiving psychotherapeutic treatment. There is some evidence to indicate that the behavioral symptoms associated with brain damage may be the result of motivational conflicts arising from parent-child malintegrative experiences rather than from the brain damage itself. In such cases psychotherapy may result in symptom and conflict resolution. Even when psychotherapy does not result in a rise in IQ, it may improve the living skills and learning ability of MRs. Therapists who maintain positive attitudes toward MRs and who are unencumbered by cultural myths concerning the hopelessness of MR make the most significant contributions to psychotherapeutic success. (20 refs.) - *J. K. Wyatt.*

1854 The Doman-Delacato treatment of neurologically handicapped children. *Developmental Medicine and Child Neurology,* 10(2):243-246, 1968.

The Institutes for the Achievement of Human Potential appear to differ substantially from other groups treating developmental problems in (a) the excessive nature of

their undocumented claims for cure and (b) the extreme demands placed upon parents in carrying out an unproven technique without fail. Advice to parents and professional workers cannot await conclusive results of controlled studies of all aspects of the method. Physicians and therapists should acquaint themselves with the issue in the controversy and the available evidence. We have done this and concur with the conclusion of Robbins and Glass: "There is no empirical evidence to substantiate the value of either the theory or practice of neurological organization...If the theory is to be taken seriously...its advocates are under an obligation to provide reasonable support for the tenets of the theory and a series of experimental investigations, consistent with scientific standards, which test the efficacy of the rationale." To date, we know of no attempt to fulfill this obligation. This statement has been approved as of March 15, 1968 by: American Academy of Cerebral Palsy, American Academy of Neurology, American Academy of Pediatrics, American Academy for Physical Medicine and Rehabilitation, American Congress of Rehabilitation Medicine, American Academy of Orthopedics, Canadian Association for Children with Learning Disabilities, Canadian Association for Retarded Children, Canadian Rehabilitation Council for The Disabled, and National Association for Retarded Children (U. S. A.). (19 refs.) - *Journal Summary.*

1855 FULLER, JOHN L. Experiential deprivation and later behavior. *Science*, 158(3809):1645-1652, 1967.

Post-isolation syndrome following experimental stimulus deprivation in puppies is hypothesized to follow emergence stress (input overload of competing emotional responses) rather than failure of behavioral organization (lack of perceptual development) or deterioration of established patterns. Puppies were separated from their mothers on the twenty-first day of life and raised in variable isolation until tested in an arena, at which time they were scored on the number and intensity of directional responses. With more opportunities for contact (breaks in isolation), there was more intense but not necessarily more frequent arena contact. When the shock of emergence was cushioned with extra handling or chlorpromazine, there was more contact; nevertheless, handling alone obviated the need for additional chlorpromazine, and the drug alone seemed to diminish contact initiative. Terriers were more active and aggressive than beagles, and this dichotomy was magnified by isolation, as isolated terriers were more active than "pet" beagles. Learning ability was highly individualized but seemed to be affected in vulnerable subjects. There was no impairment in learning a spatial reversal problem, but pets made fewer mistakes after the first change. Visual discrimination was difficult for all isolated subjects, who showed poor performance regardless of breed. Species difference and human embarrassment complicate generalization of the emergence-stress model. (33 refs.) - *E. L. Rowan.*

Jackson Laboratory
Bar Harbor, Maine 04609

1856 EARLY EXPERIENCES. *Lancet*. 2(7526): 1130, 1967. (Annotation)

Experiences in the first few months of life will have no long-term effect unless continually reinforced. Experimental support has been gained from research with motherless monkeys and with 2 children reared in isolation and by investigation of the decreasing effect of prelearning from preschool to adolescence. Since man is a relatively slow-maturing animal, it is probable that behavior remains plastic for a long time. (No refs.) - *J. Snodgrass.*

Language, Speech, and Hearing

1857 PEINS, MARYANN. Client-centered communication therapy for mentally retarded delinquents. *Journal of Speech and Hearing Disorders*, 32(2):154-161, 1967.

Establishing a non-threatening environment to increase communication is discussed within the framework of a client-centered therapy program used with 10 institutionalized (MR and borderline MR) delinquent adolescent boys who were deficient in all areas of oral communication. The Ss, all of whom were

residents of a state training school for delinquents in New Jersey, had CAs ranging from 13.2 to 16.1, and IQs extending from 47 to 78. Psychological and audiometric tests as well as diagnostic speech evaluations were administered. Therapy emphasized the oral responses used in the Ss' environment. Responses were elicited by role playing, discussions, and conversations based on daily experiences; activities were designed to focus on meaningful experiences rather than on drill. The therapeutic relationship involved a well-structured environment of freedom within a defined therapy framework; communication formed the nucleus of the sessions. The Ss received individual therapy weekly for 45-minute periods, and duration was dependent upon parole status. Two brief case reports illustrate the procedures and results. Clinical impressions indicated that client-centered communication therapy is effective in this setting. (11 refs.) *B. Bradley.*

Rutgers University
New Brunswick, New Jersey
08903

1858 FINEMAN, KENNETH R. Visual-color reinforcement in establishment of speech by an autistic child. *Perceptual and Motor Skills*, 26(3,I):761-762, 1968.

Data have indicated that through the use of systematic visual-color reinforcement by means of operant conditioning, a non-verbal autistic child can be taught to verbalize. Visual consequences can be used as a reinforcer to increase the rate of verbalizations. The technique could be used as a diagnostic tool in determining what sounds are already in the child's repertoire. (5 refs.) - *Journal abstract.*

The Neuropsychiatric Institute
UCLA
Los Angeles, California

1859 HAMILTON, JOHN W., & STEPHENS, LYNN Y. Reinstating speech in an emotionally disturbed, mentally retarded young woman. *Journal of Speech and Hearing Disorders*, 32(4):383-389, 1967.

Operant conditioning techniques were used to reinstate speech in an MR, emotionally disturbed woman (CA, 19 yr) who had not spoken for 5 years. Undesirable behavior, which included rolling on the floor and screaming, was greatly reduced and brought under control prior to speech training. Whenever these behavior problems occurred, the patient was isolated from all other people for a period of 30 minutes. Speech training then took place in 4 phases: responding (verbally) to picture cards; imitation of sentences spoken by an instructor; fulfillment of all the patient's needs and wants only when she made complete, audible verbal requests; and reinforcement of verbal responses not categorized as demands, needs, or requests. The patient was reinforced by pieces of cookies during all phases except the third. During the third phase her reinforcement consisted of having her need or want fulfilled. Gains in social behavior were noted along with the re-established speech. The program called for 100 percent reinforcement following a response; this procedure was followed consistently by all personnel. Isolation procedures were used to bring undesirable behavior under control, since it was assumed that recurring undesirable behavior was somehow being reinforced. After programming, a patient exhibits less disruptive behavior, is then treated more normally by other patients and staff members, and in turn responds less deviantly in a process which produces increasingly more normal responses. Therefore, the process has far-reaching implications. (4 refs.) - *L. Spade.*

Gracewood State School
& Hospital
Gracewood, Georgia 30812

1860 MOLLOY, JULIA S., & WITT, BYRN T. Development of communication skills in retarded children. In: Scheerenberger, R. C., ed. *Training the Severely and Profoundly Mentally Retarded.* (*Mental Retardation in Illinois*, Monograph Supplement #3.) Springfield, Illinois, Department of Mental Health, 1967, p. 91-102.

The development of communication in retarded children is described in terms of therapy through perceptual training. Communication is defined as an exchange of ideas and information and can be verbal or non verbal. The system of using words is called language, and the way one says words is called speech. Since about 40 percent of learning capacity is linguistic ability, language development is delayed in most retardates. The problem is to structure readiness for producing speech by perceptual training and

then to induce language functioning on a conceptual level. Major areas explored to determine those factors which may be adversely affecting useful communications include: (1) hearing loss, (2) speaking mechanism, (3) environmental climate, (4) symbolic dysfunction, and (5) cognitive ability. A hearing loss is not a contributing factor to delayed use of language if the child responds when his name is whispered no closer than 3 feet behind his back. A child's speaking mechanism is usable for speech if he can swallow, suck, and maneuver his tongue. The child's environment is adequate for development of good social language if it provides some stimulation, if it makes him feel a need to talk, and if he is not abused or ignored. Symbolic dysfunction is a strong factor in the delayed functioning of many retardates. A child cannot be expected to function beyond his cognitive level, and his teacher should be aware of his successes and failures as shown in psychometric data. A differential diagnosis must be made before a communication program can be planned. The course should proceed through defined steps: (1) learning to listen through attention compelling stimulation, (2) listening and reacting to sound, (3) listening and responding to sound, and (4) learning to listen and then to produce appropriate vocal responses. The transition from saying words to using words is a big step, as the acquisition of good usable language skill is the goal. The communication skills of any retardate can be improved. (11 refs.) - *B. Bradley.*

1861 LOVELL, K., & DIXON E. M. The growth of the control of grammar in imitation, comprehension, and production. *Journal of Child Psychology and Psychiatry,* 8(1):31-39, 1967.

Two hundred nursery and infant school children between the ages of 2 and 6 years and 80 educationally subnormal (ESN) children, 6 or 7 years of age, were tested on grammatical contrasts from the Imitation, Comprehension, and Production Test of Fraser and associates. The normal Ss were selected from among students whose socioeconomic status was more representative of lower economic classes; they were selected by teachers to represent a cross-section of the children's abilities at age level. The mean Terman-Merrill IQs of the ESNs were 61.1 for the 6-year-olds and 66.5 for the 7-year-olds. At all age levels in both normal and ESN children, imitation is more advanced than comprehension and comprehension is more advanced than production. The rank difficulty of items remains constant (1) across tasks, (2) across age levels for items within a given task, and (3) for items within a given task across normal and ESN pupils. These results are consistent with Piaget's ideas regarding the nature of the relationship between language and thought. (3 refs.) *B. Bradley.*

University of Leeds
Leeds 2, England

1862 DALE, D. M. C. *Deaf Children at Home and at School.* Springfield, Illinois, Charles C. Thomas, 1967, 272 p. $7.50.

Handicaps which may be associated with deafness can be minimized if young children learn to lip-read and use hearing aids and if they are given sensible social training. Because deaf children acquire language at a slower rate than children without hearing-handicaps and because it is often difficult to measure their intellectual capabilities, intelligence test scores frequently do not present an accurate picture and should be interpreted with caution. Deaf children need to have access to audiology clinics, good preschool facilities, regional educational and audiological services, tutoring facilities, schools with imaginative syllabi designed to promote development in all areas, and schools with programs that allow the deaf child to mix with hearing children for over 1/2 of each day. In order to train for work that is in keeping with their abilities and aptitudes, deaf children need careful vocational counseling. Social clubs for deaf adults provide social and recreational opportunities. This coverage of educational and social factors which have demonstrated their usefulness in the treatment of childhood deafness is intended for the use of parents and teachers of deaf children. (96-item bibliog.) - *J. K. Wyatt.*

CONTENTS: Some Basic Information about Deafness; The Young Child and His Family; Language Development in the Young Child; Cooperation Between Home and School; Regional Services for Deaf Children; Deaf Children in Ordinary Schools; The Development of Language in School; The Teaching of Reading; Speech Teaching; School Records; Deaf Adults.

1863 SILVER, ARCHIE A., PFEIFFER, ELSBETH, & HAGIN, ROSA A. The therapeutic nursery as an aid in diagnosis of delayed language development. *American Journal of Orthopsychiatry*, 37(5):963-970, 1967.

Three case histories illustrate the use of the therapeutic nursery as a diagnostic technique in assessing delayed language development. The therapeutic nursery at Bellevue Hospital (New York City) is used concurrently with social, medical, psychological, and neurological evaluations, enzyme and chromosome studies, and examination of the peripheral sensory apparatus to aid in diagnosis of delayed language development. This nursery evaluation is structured in terms of the relationship between (1) the child and his parents, (2) the child and the play therapist, and (3) the child and other members of the nursery group. The frequency and content of communication are analyzed for emotional value, linguistic characteristics, and grammatical usage and complexity. Observations are made regarding the comprehension of cues according to various modalities at various levels of maturation, preferred channel of expression, linguistic quality of expression, emotional content, and lateral dominance. (12 refs.) *B. Bradley.*

New York University
Bellevue Medical Center
New York, New York

1864 O'DOHERTY, NEIL. A hearing test applicable to the crying newborn infant: Preliminary report. *Developmental Medicine and Child Neurology*, 10(3):380-383, 1968.

Hearing tests were made on newborn infants who were crying spontaneously shortly before a feed was due, by vocalization by the examiner at about 20 cm distance from the baby's ear. Sound level was about 50 decibels and spectographic analysis showed that the main frequency was about 100 c/sec. A quieting response was produced in the majority of infants and was graded into 5 categories according to the degree of response. If the response is one of attention mediated at cortical level, it may be important in predicting the ultimate cerebral status of the neonate. (8 refs.) - *Journal summary.*

West Middlesex Hospital
Isleworth, Middlesex
England

1865 Testing infant hearing by EEG response. *Journal of the American Medical Association*, 200(12):29, 1967.

A technique for testing the hearing of the very young and the recalcitrant is presently being developed as a practical clinical test. Testing is accomplished by analyzing auditory brain waves with computerized summing of the desired responses. (No refs.) *J. Snodgrass.*

Mental Processes and Psychodiagnostics

1866 CROMWELL, RUE L. Success-failure reactions in mentally retarded children. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development*. New York, New York, Grune & Stratton, 1967, Chapter 19, p. 345-356.

Studies based on the application of Rotter's social learning theory to MR emphasize that an evaluation of the developmental level of success-failure conceptualization of EMRs and TMRs is necessary in order to understand their personality dynamics and educative processes. It was assumed that MRs experience more than a normal amount of failure and that they therefore have a lower generalized success expectancy than normals. A comparison of normals and MRs matched for initial performance ability on a reaction-time task showed that continued success was associated with a greater increase in initial performance gains for MRs than for normals, degree of failure reaction was greater for MRs, and normals made more frequent increases in effort after failure experiences. MRs did not consistently associate their own behavior with the reinforcement they were given. When success and failure were specifically defined in terms of an individual's awareness of his own effectiveness or

ineffectiveness in determining goal attainment or nonattainment, intercorrelations and increase with age were found between locus of control and delay of gratification. Internal locus of control was assumed to be related to more advanced development, while hedonistic locus of control was associated with less mature development. A locus of control scale was developed to differentiate between internal and hedonistic Ss. Children with internal locus of control were not differentially affected by positive, negative, or neutral learning situations; the performance of external or hedonistic locus of control Ss was negatively affected by negative and neutral climates and was the same as that of internal Ss in the positive situation. (12 refs.) - *J. K. Wyatt.*

1867 TEITELBAUM, HARRY A., & GANTT, W. HORSLEY. Emotional motivation in conditional reflexes and in homeostasis: Its significance in learning and in psychopathology. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development.* New York, New York, Grune & Stratton, 1967, Chapter 18, p. 321-344.

Since emotional motivation and mobilization processes are essential components of conditional reflex learning and homeostatic organism-environment adaptation, defective learning and psychopathological adaptation can result from the disturbance or failure of these processes. The development and intensity of conditional reflexes are dependent on cerebral integration of unconditional and conditional stimuli with an emotional motivation process; in the absence of either of these prerequisites, conditioning does not occur. The effects of defective organism-environment adaptation differ at the various levels of biological need. Lower level disturbances affect the emotional reactions associated with basic physiological needs, while higher level disturbances affect complex instinctive and learned emotional motivation processes. The activities of mobilization and motivation processes are directed toward the reestablishment of homeostasis at various levels. Research findings evidence a "normal physiological basis for maladaptation" which employs maladaptive nonhomeostatic processes to create a maladaptive or destructive state of environmental equilibrium. The adaptive nature of homeostasis counterbalances these maladaptive processes. Schizokinesis, autokinesis, and maladaptive psychopathology are the result of homeostatic failure caused by stressful conditions. (89 refs.) - *J. K. Wyatt.*

1868 ZIGLER, EDWARD. Motivational and emotional factors in the behavior of the retarded. In: U. S. Children's Bureau. *New Frontiers in Mental Retardation.* (Clinical Directors' Mental Retardation Conference held June 5-7, 1966, Asilomar, California.) Washington, D. C., 1966, p. 47-72.

In order to fully understand the behavior of MRs and to work toward the alleviation of the social ineffectiveness displayed by many of them, it is important to consider personality development and motivational and emotional factors and to avoid concentrating entirely on their low level of cognitive potential. Although institutions consider intelligence to be the critical post-release adjustment factor, outcome release studies have identified anxiety, jealousy, overdependency, poor self-evaluation, hostility, hyperactivity, and failure to follow orders as being the primary factors related to poor social adjustment. Research evidence indicates that the pre-institutional social histories of MRs are atypical and have varying effects on motivation. Social deprivation may result in either heightened efforts to interact with a supportive adult or in reluctance and wariness to experience adult interaction, perseveration, overdependency, and change in IQ. Failure reinforcement and institutionalization affect personality development. Recent emphasis on the understanding of personality, motivational, and emotional factors is hopeful since research evidence suggests that environmental manipulation has a greater effect in these areas than in cognitive ones. (81 refs.) - *J. K. Wyatt.*

1869 TALKINGTON, LARRY W. Over-achievement or stimulation? A case study. *Digest of the Mentally Retarded,* 4(1):21-23, 1967.

A case report of a boy with Down's syndrome who far exceeded his predicted level of achievement is presented to illustrate the inadequacy of IQ and clinical type as indicators of learning potential. The S was 29 years old when admitted to the Montana State Training School after the death of his parents. His parents were of Dutch extraction, aged 48 and 41 at his birth. He was their only child. Pregnancy had been normal, except for influenza in the seventh month. Delivery was normal, 1 week early with forceps. Parents' educational levels were eleventh grade for the father and third-year college for the mother. Because of slow

motor development and physical symptoms associated with Down's syndrome, the boy was diagnosed as MR when he was 1 year old. Due to lack of special education facilities he was enrolled in public school classes until age 12, when he reached sixth-grade status and was removed by his parents. It was felt that he was performing below grade level and was being ridiculed by classmates. An IQ score prevented his admission to a special school for the retarded. His mother, who had had public school teaching experience, tutored him. Psychological test data have ranged from IQs of below 50 to 93. Current testing indicates Wechsler Adult Intelligence Scale scores of Verbal, 78; Performance, 72; Full Scale, 74. His scores on the Wide Range Achievement Test were: reading, 13.2; spelling, 10.4; and arithmetic, 3.6. In addition to approximating a first-year college reading level, he speaks German and French at about the first-year conversation level and has limited proficiency in Spanish. He plays the organ, clarinet, flute, guitar, saxophone, and accordian and types well enough to be able to correspond with his trust officer regarding a sizable estate. His reading interests are focused on biographic material, and his hobbies include classical music. (8 refs.) *B. Bradley.*

Montana State Training
School and Hospital
Boulder, Montana

1870 CLARKE, ANN M., & CLARKE, A. D. B. Learning transfer and cognitive development. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development.* New York, New York, Grune & Stratton, 1967, Chapter 7, p. 105-139.

The results of 5 series of studies which employed a variety of discrimination tasks to analyze the processes used in new learning by TMRs and normals revealed that: (1) differences between the learning and transfer of MR adults and children decreased or disappeared when task complexity was held constant, (2) differential transfer to a new task took place when varied task complexity was used with matched MR and normal Ss, (3) transfer between matching tasks occurred both when the tasks contained a small amount of conceptual content and when they differed markedly in conceptual content, (4) complex conceptual task overlearning facilitated transfer to later conceptual tasks, and (5) the effects of the different degrees of complexity used in training were relatively persistent. Transfer may have been facilitated by experiences in the original situation which caused Ss to pay added attention to the details of a new problem and which trained them to make common responses to dissimilar stimuli. The superior performance exhibited by Ss trained on complex material appeared to be due to the development of increased sensitivity to the differences between the various categories of objects employed. The common tendency to underestimate the learning potential of MRs may be due to their inability to learn spontaneously from life's experiences and to training practices that are oversimple, stereotyped, and too limited. The assumption emerging from these studies--that the overlearning of simple materials does not lead to generalized transfer--may explain why MRs do not attain the skills within their powers. Long periods of systematic training in varied and complex tasks may result in surprising developmental advances and the rapid acquisition of new skills. (22 refs.) - *J. K. Wyatt.*

1871 MYKLEBUST, HELMER R. Learning disabilities in psychoneurologically disturbed children: Behavioral correlates of brain dysfunctions. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development.* New York, New York, Grune & Stratton, 1967, Chapter 17, p. 298-320.

Preliminary data on the performance of children with psychoneurological learning disabilities on nonverbal-nonsocial, social-nonverbal, and verbal learning tasks during which EEG, glossal motions, vocal patterns, and respiration patterns were simultaneously recorded suggest (1) that verbal learning requiring the transduction of visual data into its auditory equivalents was the most difficult for children with learning disabilities and (2) that autocorrelation data differentiate between ataxia, dysarthria, and expressive aphasia. The 15 Ss (mean age 10.8 yr) were representative of several types of learning disabilities, most of which were manifested in reading defi-

ciencies. Visual and auditory batteries were used to evaluate performance on each learning task. Performance on nonverbal-nonsocial and social-nonverbal tasks increased with age. Auditory, visual, and auditory-visual verbal scores improved slightly with age, but visual-auditory verbal scores did not. Variations between the EEG patterns of normal children and those of children with learning disability suggest the possibility that "reaction time" alteration may be associated with brain dysfunction. EEG readings in situations of stimulated mental activity may allow for added understanding of the relationships operating among electrocortical patterns and learning, may prove to be useful in diagnosing specific types of learning disability, and may uncover data which does not always appear on a passive EEG. (28 refs.) - *J. K. Wyatt.*

1872 BLOUNT, WILLIAM R. Naive male retardates and U. S. moneys: An exploratory study. Paper presented at the 91st annual meeting of the American Association on Mental Deficiency, Denver, Colorado, May 15-20, 1967, 13 p. Typed.

Twenty male MRs who had had no training in making change were divided into 2 groups: 10 Ss (MA, 3 yrs) who showed preference for money on the basis of size or quantity, and 10 Ss (MA, 5 yrs) who were not influenced by these dimensions. A penny, 3 pennies, a nickel, a dime, a quarter, a half dollar, a commissary card worth 1 dollar, and 2 one dollar bills were used as stimuli. Ss were instructed to select their preference and indicate the greater amount. All Ss were confused about the correct value order of the money. The dimensions of form, size and quantity were important for the MRs choice of money. The smaller denominations seemed to be more important incentives than larger denominations. The 3 pennies were considered to be more money by the 3 Ss with an MA of 3 years than the nickel or dime. The quarter was the most preferred of the small change pairs. The Ss with an MA of 5 saw the half dollar as more money than the one dollar commissary card. The ability of the Ss in this study was superior to that of the normal Ss reported in the Strauss study. (9 refs.) - *R. Froelich.*

Box 172
George Peabody College
Nashville, Tennessee 37203

1873 REED, JAMES C., & REED, HOMER C. Concept formation ability and nonverbal abstract thinking among older children with chronic cerebral dysfunction. *Journal of Special Education*, 1(2):157-161, 1967.

Fifty heterogeneous brain-damaged children diagnosed on anamnestic evidence were matched for age (mean CA, 12.48) and education with 50 controls to investigate the hypothesis of selective impairment among brain-damaged children. A multiple covariance design used a pro-rated Wechsler-Bellevue Performance IQ (PIQ) omitting Block Design (BD) scores and W-B Verbal IQ as covariates. Thus ability on the BD subtest was partialed out. An F test was not significant when intelligence was controlled. In a second study, 25 new controls were matched for age with 17 brain-damaged Ss selected from among the first 50 Ss. Halstead Category Test (HCT) scores were collected and compared under blind conditions. A covariance analysis using the HCT and the full Wechsler-Bellevue PIQ and adjusted means was not significant. General rather than specific intellectual impairment seems to exist among older children with chronic cerebral dysfunction, and any presumptions about lack of concept formation or abstract thinking must specify the conditions. Such skills may be a function of general intelligence. (6 refs.) - *R. D. Perkins.*

Indiana University Medical Center
Bloomington, Indiana

1874 ABERCROMBIE, M. L. J. Some notes on spatial disability: Movement, intelligence quotient and attentiveness. *Developmental Medicine and Child Neurology*, 10(2):206-213, 1968.

It is suggested that recent work on the effect on perceptual development of reafference and of central recording of efference connected with active movement makes it likely that the motor disorders of cerebral palsy affect perceptual skills. It is possible that conflict between attentiveness to different stimuli may play a part in visuomotor disorder. Training to pay attention to somaesthetic sensation may benefit cerebral palsied children. (15 refs) - *Journal summary.*

University College London
Gower Street
London, W. C. 1, England

1875 MONEY, JOHN, & BOBROW, NANCI A. Birth defect of the skull and face without brain or learning disorder: A psychological and pedagogical report. *Journal of Learning Disabilities*, 1(5):289-298, 1968.

Comprehensive educational and psychological testing of a 13-year-old boy with skull and facial anomalies revealed average intelligence, an absence of learning disability, and, with the exception of color-blindness and left handedness, normal neuropsychological abilities. His specific deformities included congenital hypoplasia of the left facial bones; absence of the left eye and left external ear; bony abnormalities of the left maxilla, zygoma and mandible; asymmetrical skull flattened from the left frontal to the posteroparietal area; short stature; and delayed pubertal development. The psychological test battery consisted of the WISC, Harris Test of Lateral Dominance, Draw-A-Person, Wepman Auditory Discrimination Test (Form I), Gray Oral Reading Test (Form A), Ishihara Test for Color Blindness, Sacks Sentence Completion, Benton Visual Retention Test (Form C), Bender Visual-Motor Gestalt Test, Thematic Apperception Test, Road Map Test of Direction Sense, and a test of smell. Learning disability resulting either from direct brain involvement or from the emotional effects of the boy's physical impairment was expected, and its absence illustrates the need for detailed studies directed toward establishing the relationship or nonrelationship between specific physical impairment and educational achievement or failure. In order to investigate the actual formation of this boy's brain, a study at the time of death will be necessary. In this case and in those of a similar nature, administrative machinery similar to that used by Medic-Alert could be established to notify physicians that an autopsy is needed in order to allow for the correlation of psychological findings during life with postmortem research. (6-item bibliog.) *J. K. Wyatt.*

Johns Hopkins University
School of Medicine
Baltimore, Maryland 21205

1876 GALKOWSKI, TADEUSZ, DADAS, HENRYK, & DOMANSKI, REMIGIUSZ. The psychogalvanic reflex in oligophrenic children. *Developmental Medicine and Child Neurology*, 10(3):349-354, 1968.

Studies of the psychogalvanic reflex have been done at the State Neuro-Psychiatric Sanatorium for Children at Garwolin, near Warsaw. There were 32 children from a normal school as a control group. The experimental group of children had a mean intelligence quotient of about 50. There were significant differences between quantity of response and skin resistance in oligophrenic and normal children. The closest relationship to the intelligence level was found in the responses to visual and verbal stimuli. Close connections between the skin resistance (before starting the test) and the quantity of response to respective stimuli were noticed in retardates. (8 refs.) *Journal summary.*

1877 ZIGLER, EDWARD, & BUTTERFIELD, EARL C. Motivational aspects of changes in IQ test performance of culturally deprived nursery school children. *Child Development*, 39(1):1-14, 1968.

Intelligence testing procedures allowing the separation of motivational from cognitive-achievement determinants of changes in Stanford-Binet IQs were employed with culturally deprived children who did or did not attend nursery school. The children who attended nursery school increased significantly more in their IQ scores (standard administration) from the beginning to the end of the nursery school year than did the children who did not attend nursery school. The findings indicated that the increase in IQ which resulted from the nursery school experience was due to a reduction in the effects of debilitating motivational factors rather than to changes in rate of intellectual development. (27 refs.) - *Journal abstract.*

Yale University
New Haven, Connecticut 06520

1878 JARVIK, LISSY F., & ERLENMEYER-KIMLING, L. Survey of familial correlations in measured intellectual functions. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development*. New York, New York, Grune & Stratton, 1967, Chapter 25, p. 447-459.

When the median correlations of 8 relationship groups (unrelated raised together, dizygotic twins and sibs raised together, monozygotic twins raised together, foster

parent-child, parent-child, unrelated raised apart, sibs raised apart, and monozygotic twins raised apart) were compared for measures of intellectual ability obtained from 56 studies with 3 categories of environmental and hereditary communality (minor, intermediate, and major), the results indicated rising correlations with increasing genetic similarity but no orderly relationship between the intellectual ability data and the degree of environmental communality. Additional analysis demonstrated a clear trend toward an increasing degree of intellectual similarity in direct proportion to the increasing degree of genetic communality. Data on orphanage-reared children, foster children, and monozygotic and dizygotic twins also show the effects of genotypic variations. However, heritability, the genotypic portion of phenotypic variation, should not be regarded as a fixed, true property because the value it assumes is dependent on the population under consideration and on the environmental conditions governing observations. Heritability measurements would probably be highest for genetically heterogeneous groups exposed to relatively homogeneous environmental situations. Low measurements would result from comparatively homogeneous groups which had experienced diverse environmental circumstances. Heritability estimates do not allow for the interaction between environment and genotype. Research which concentrates on identifying the differential effects of specific developmental stages upon different genotypes within the normal range of intellectual development may lead to the formation of distinctive environmental patterns based on specific individual needs--an achievement which would have important implications for MR. (18 refs.) - *J. K. Wyatt.*

1879 FULLER, RENEE. Psychological results in treated phenylketonuria: I. Gesell findings. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development.* New York, New York, Grune & Stratton, 1967, Chapter 10, p. 153-180.

When the motor, adaptive, language, and personal-social categories of the Gesell Developmental Schedules of 112 PKU clinic outpatients were compared with those of a diseased group of 80 non-PKU MRs, the data revealed a pattern of greater impairment of the language and adaptive behavior categories than of the motor and personal-social areas among PKU Ss regardless of when dietary treatment was begun and an absence of consistent impairment patterns among controls. The ages of the PKUs at the start of a Lofenalac diet varied from a few days to 5 1/2 years; non-PKU Ss were in the same age range. When the PKUs were considered as a group, the evidence indicated that, in general, the earlier the introduction of dietary therapy, the smaller the degree of impairment. However, individual consideration revealed that good dietary control started shortly after birth did not insure normal development. Some Ss who had received early and consistent dietary treatment showed a marked degree of MR, while others who had been placed on low phenylalanine diets after age 3 had improved to a point where there was little or no evidence of MR. Ss with phenylalanine levels ranging from 2 to 9 mg/100 ml performed significantly better (chi square 0.01 to 0.001 level) than those whose phenylalanine levels were below 2 or above 9 mg/100 ml or those who were not receiving dietary therapy. MR in the disease comparison group was due to unknown causes, congenital anomalies, birth trauma, mongolism, convulsive disorders, possible schizophrenia, postencephalitis, or miscellaneous causes. Interpretation of the data showing decrease in MR level with age and dietary control is complicated because the number of normal children in the PKU population was not known. (49 refs.) - *J. K. Wyatt.*

1880 HAYWOOD, H. CARL. Experiential factors in intellectual development: The concept of dynamic intelligence. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development.* New York, New York, Grune & Stratton, 1967, Chapter 6, p. 69-104.

When interpreted from a dynamic, epigenetic, ontogenetic point of view, empirical evidence on intellectual development indicates: (1) that the combined activity of the genetically-determined structure of the nervous system and the unique person-environment interaction of each individual is responsible for the development of intelligent behavior and (2) that differences in the quality of direct sensory stimulation or deprivation, social-cultural factors, and focused training affect intelligent behavior. Data on infrahuman organisms show that erratic adult emotionality and reduced learning ability are the result of reduced

326-079 O - 68 - 8

sensory stimulation and perceptual experience during early development, while enriched sensory stimulation in the preweaning period may lead to reduced adult affectual response or, when introduced after weaning, may result in enhanced learning ability. Human organisms appear to respond to minimally stimulating lower class or institutional environments by developing lower levels of intellectual functioning which decrease with age, by "progressive MR", and by failure to achieve normal language development because of limited functional mastery of the necessary syntactic modes. "Progressive MR" can be offset by early replacement of minimally stimulating surroundings with environments which present increased opportunities for progressively complex perceptual experiences. Preschool training which is designed to provide opportunities for language development, broad perceptual experiences, and the acquisition of positive attitudes toward learning and achievement may significantly increase the later scholastic achievement of initially MR and disadvantaged children. The introduction of appropriate experiences at optimal times may enhance morphological and neural development. Specific training has immediate specific effects as well as a generalized range of continuing effects. (158 refs.) - *J. K. Wyatt.*

1881 GUILFORD, J. P. Intelligence has three facets. *Science*, 160(3828): 615-620, 1968.

A comprehensive, systematic, theoretical model which represents the structure-of-the-intellect in 4X5X6 cubical form gives a rational picture of the multifactor nature of intelligence and illustrates the extremely limited value of the IQ assessment provided by conventional intelligence tests. The model includes 5 kinds of operations (evaluation, convergent production, divergent production, memory, and cognition), 6 formal kinds of product information (units, classes, relations, systems, transformations, and implications), and 4 substantive kinds of content (figural, symbolic, semantic, or behavioral). This taxonomic model provides much parsimony; however, additional research is expected to identify more than the 120 total abilities it allows. Present evidence indicates that intelligence is not fixed at birth and that greater intelligence is related to increased education. Each intellectual ability should be regarded as a generalized skill, the development of which is affected by an individual's experiences within a culture and which can be further developed by means of special exercise. This approach to intelligence illustrates a need for the development of (1) intelligence tests that assess abilities neglected in standard tests, (2) educational philosophy, curricula, teaching methods, and examination methods based on a structure-of-the-intellect model, and (3) procedures that may be used to cultivate intellectual skills and allow man to begin to approach the intellectual limits set by heredity. (19 refs.) - *J. K. Wyatt.*

University of Southern California
Los Angeles, California

1882 THORNDIKE, ROBERT L. Structure of intelligence. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development*. New York, New York, Grune & Stratton, 1967, Chapter 23, p. 413-428.

Because it has demonstrated real limitations in terms of its scientific usefulness, the classic concept of "general intelligence," which treats intelligence as a single unitary behavioral factor, has been attacked by Guilford, whose structure of the intellect model is based on a specialized abilities approach which hypothesizes a complex intellectual structure composed of at least 120 different abilities. Interpretation of some of Guilford's data from both "general intelligence" and specialized abilities viewpoints indicates that: (1) traditional intelligence-test tasks demonstrate a large amount of communality which can be accounted for by a single factor but which also includes limited and specific abilities; (2) as the range and variety of tasks are extended and multiplied, the common factor is reduced and a larger number of secondary factors can be identified; and (3) the first factor plays a predominant part in accounting for the patterning of individual differences in test performance, and the drop in salience between the first and second factors is a major one. While both "general intelligence" and special abilities theorists agree on these basic facts, they widely disagree on their implications for theory and for the construction and use of tests. In order to evaluate the extent to

which the special abilities concept should replace the concept of general intelligence, additional data on the correlations between a wide range of tasks, as well as information on biological and physiological correlations will be needed. (12 refs.) - *J. K. Wyatt.*

1883 CABANSKI, STANLEY. Psychological diagnosis and evaluation of the severely retarded: A programmatic approach. In: Scheerenberger, R. C., ed. *Training the Severely and Profoundly Mentally Retarded.* (*Mental Retardation in Illinois*, Monograph Supplement #3.) Springfield, Illinois, Department of Mental Health, 1967, p. 39-46.

An overview is presented of some of the contributions made by psychological evaluations in program planning for the SMR population. Although a diagnosis of SMR is often assumed to extend to all facets of personality, the label of SMR communicates some information but fails to provide knowledge of the unique characteristics of that person. The value of a diagnosis is that it aids in understanding and working with a particular person. A psychometric definition of MR is useful, and an IQ is a diagnostic implement in evaluating the retarded; however, an IQ has its limitations and should not be regarded as an end in itself. Testing is a tool for measuring behavior, and more information concerning behavior is needed. Tests, as tools, sample important behavior and provide a normative guidepost which can serve as a framework for evaluation of behavior patterns. In evaluating the SMR, one must consider what information is most useful in training and planning for a particular person. Common definitions of intelligence have focused on: (1) genetically determined mental potentiality, (2) capacity for learning and profiting from experience, and (3) present abilities to function at a particular time. All 3 of these definitions have some limitations, although the third is most directly tied to observable behavior. Evaluations should include both the assets and liabilities of the child. A teacher needs to have a starting point within the actualized capabilities of the individual, and any information concerning what a SMR person can do--especially if that information is anchored by normative developmental guideposts --is beneficial in working with him. If the intelligence test is given as a measure of the person's actual ability rather than his potentiality, it can serve as a measure of learning. Specific analyses of test responses can provide additional behavioral data. Projective tests can also be used. Evaluation should be concentrated on the operational definition of intelligence, that is, what a person can do now. (10 refs.) *B. Bradley.*

1884 SCHEERENBERGER, R. C. Methodology: General principles based on psychological research. In: Scheerenberger, R. C., ed. *Training the Severely and Profoundly Mentally Retarded.* (*Mental Retardation in Illinois*, Monograph Supplement #3.) Springfield, Illinois, Department of Mental Health, 1967, p. 65-76.

An overview of research relating to the learning characteristics of the MR is presented with attention directed toward 4 areas of verbal learning: rate of learning, factors affecting learning, retention, and factors affecting retention. Experimental psychologists have analyzed both the behavior of the retardate and the learning phenomena *per se*. Data indicate that when a task is within the comprehension of the retarded they will learn that task as rapidly as normal persons of comparable mental ability. The MR population is a highly heterogenous group with variable learning characteristics, and MA is not a reliable predictor of training performance. Therefore, the teacher must be familiar with the abilities and limitations of each child and must not rely on intelligence test data to predict specific training performance. Research data has indicated a qualitative difference between the learning of TMRs and that of normal children. Although the TMR can learn a discrimination task as well as normal children, they often do not because they do not pay attention to the correct stimulus cues. It is the lack of attention rather than the approach to the correct cue of the task that impedes performance. Utilization of past experiences by retardates is analyzed under the categories of mediation and transfer of training. Conditions of mediation such as the use of a verbal label have helped retardates in learning paired-associate tasks. Graduated learning aids in transfer and provides the TMR with a broad general base for transfer. The retardates can learn how to solve problems, and their rate of learning accelerates as they begin to develop "learning sets." It is concluded that the retardate can benefit from past experience and flexibility in learning. Highly

meaningful tasks are readily learned and transferred. Data demonstrates that if the material is well learned, the retardates will show no greater long-term retentive losses than normals. However, there is difficulty with short-term retention. (55 refs.) - *B. Bradley.*

1885 JASTAK, JOSEPH F. Intelligence tests and personality structure. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development.* New York, New York, Grune & Stratton, 1967, Chapter 16, p. 282-297.

A reorientation in the field of psychological measurement which would conceptualize human personality as an organized and coordinated system consisting of intelligence, an integrative global factor, and specific nonintellectual lobal factors (language, reality contact, motivation, somatic efficiency, affect, and cognition) may increase the usefulness of psychometric tests so that they operate at 95 percent of their potential efficiency. The intelligence factor determines the size of the personality and accounts for 15 to 20 percent of test score variance. It identifies individual differences between people more clearly than intra-individual variations. Intelligence includes the nonspecific conditions of (1) genetic behavioral integration capacity, (2) opportunities to develop innate integrative capacity, and (3) nervous system rhythm peculiarities which inhibit or facilitate integrative functions. The relationship of one lobal factor to another and the pattern of lobal factor variances describe the different shapes, forms, subdivisions, and internal or external control characteristics of each unique personality. Identification of the amount of variance accounted for by each of 50 hypothesized abilities included in the lobal factors would permit highly individual behavior evaluations which, when combined with intelligence and environmental data, would effect specific defect identification and facilitate a movement away from therapeutic and remedial procedures which use stereotyped and ritual methods in the treatment of well-defined disabilities. (21 refs.) - *J. K. Wyatt.*

1886 HOLT, ROBERT R. Diagnostic testing: Present status and future prospects. *Journal of Nervous and Mental Disease,* 144(6):444-465, 1967.

The role of diagnostic testing is discussed with the primary focus on values, status, and the future of assessment techniques. Studies of psychologists in state institutions indicate that the major function of a clinical psychologist in institutions for the MR involves diagnostic procedures. The training in techniques of diagnosis has been modified and the acquisition and exercise of clinical skills has been transferred to internship training centers. Factors influencing the decline in the attitudes toward diagnostic testing are: (1) a rapid expansion of the need for diagnosticians resulting in poorly qualified persons, (2) inter-professional conflict, and (3) initial overselling of clinical skills. The role of the clinical psychologist is not crystallized, and this results in a complexity of duties and in poorly defined goals. Often the tester's livelihood depends upon the value of the reports to those who employ him rather that to the patient or testee. Deficiencies of research in psychodiagnostics involve a lack of consideration for the artistic nature of testing. Validational research should not only include objective test scores as predictors, but clinical judgments as well. The psychodiagnostician should emerge as a more broadly trained specialist who relies on the assistance of technicians. (70 refs.) - *B. Bradley.*

Research Center for Mental Health
New York University
Washington Square
New York, New York 10000

1887 KNOBLOCH, HILDA, & PASAMANICK, BENJAMIN. Prediction from the assessment of neuromotor and intellectual status in infancy. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development.* New York, New York, Grune & Stratton, 1967, Chapter 21, p. 387-400.

The results of a follow-up study of 2 groups of school-age children (CAs, 6 yr, 3 mo to 9 yr, 11 mo) originally tested in infancy demonstrate that: (1) later neurological integrity and intellectual functioning can be

predicted from infancy evaluations; (2) both mild and gross intellectual deviations submit to early detection; (3) the ability to maintain a normal level of intellectual functioning is significantly related to neuromotor abnormality in infancy; (4) convulsive seizures appear to be related to intellectual developmental modification; and (5) a decrease in IQ to below 80 or a decrease of 15 or more points is related to seizures and/or socioeconomic factors. The study population was composed of Ss with no intellectual or motor abnormalities and Ss with minor deficits, major motor deviations including CP, and/or MR; neurologic and Gesell Developmental data on all Ss had been obtained at 16 to 52 weeks of age. Because of incomplete data the evaluation of 70 Ss is limited to comparisons of infant developmental and school-age intelligence quotients. At school age the remaining Ss were administered a test battery which consisted of the Stanford-Binet (S-B) Intelligence Test, school achievement tests, and tests designed to assess perceptual-motor integrity, audio-visual integration, gross and fine motor skills, kinesthesia, and speech and language skills, as well as a group of items reported to indicate the presence of brain damage. The correlation between infant DQ and later S-B IQs for 123 Ss was 0.70. For infants with initial DQs below 80 the correlation was 0.68, while for those initially above 80 the correlation was 0.48. When infants with DQs below 80 and with no modifying factors were separately evaluated, the correlation was 0.71. Infancy neurological diagnoses were 92 percent correct for 94 Ss and 94 percent correct for a second group of 82 Ss. (9 refs.) - *J. K. Wyatt.*

1888 HORNER, R. DON. A factor analysis comparison of the ITPA and PLS with mentally retarded children. *Exceptional Children*, 34(3):183-189, 1967.

A factor analysis comparison of the Illinois Test of Psycholinguistic Abilities (ITPA) and the Parsons Language Sample (PLS) was completed on a stratified sample of 50 MR children from the Parsons State Hospital and Training Center (Parsons, Kansas). Ss ranged in CA from 10-14 years, adaptive behavior extended from -1 to -4 (according to the Leland Adaptive Behavior criteria), and the intelligence level ranged from -1 to -5 (Heber classification). The Peabody Vocabulary scores for these Ss extended from 16-89. Results were compared by use of the Pearson product moment correlation coefficient. The intercorrelation matrix was subjected to a principle components factor analysis with a varimax rotation through 19 iteration cycles. Each of the 15 subtests of the 2 language instruments had high loadings on 1 of 5 different factors: (1) immediate recall of auditory symbols, (2) general linguistic ability, (3) imitation of a motor act, (4) gestural response to a verbal stimulus, and (5) comprehension and/or expression. It was concluded that the ITPA and PLS tap highly related behavior. Subtest correlations which did not indicate an extremely high degree of interrelatedness were motor encoding of the ITPA with echoic gesture test of the PLS as well as the intraverbal gesture subtests of the PLS with all the subtests of the ITPA. Data indicated that the directions for the PLS intraverbal gesture subtest ought to be revised and that the encoding subtests of the ITPA may depend too much upon comprehension or decoding of test stimuli. A complete battery of subtests from these 2 instruments would include all but the PLS intraverbal gesture test and the ITPA vocal and motor encoding subtests. (19 refs.) - *B. Bradley.*

Parsons Research Center
Parsons State Hospital and
Training Center
Parsons, Kansas

1889 THORPE, J. G., BARDECKI, A., & BALAGUER, A. B. The reliability of the Eysenck-Withers personality inventory for subnormal subjects. *Journal of Mental Deficiency Research*, 11(2):108-115, 1967.

The Eysenck-Withers Personality Inventory was analyzed to determine its reliability for use with subnormal Ss. This questionnaire purports to measure neuroticism and introversion-extraversion for the purpose of improving prediction of adjustment in the community. An analysis was made of the effects of 2 types of administration and 2 examiners, test-retest reliability, and inter-examiner reliability. The Ss were 72 subnormals (36 males and 36 females) with a mean CA of 50 and a mean IQ of 59.5. They were randomly divided into 6 groups of 12 Ss each. The first 2 groups were tested by a female examiner and the second 2 groups by a male examiner. The Ss in 1 of the 2 groups tested by the same examiner received copies of the test and marked their own forms,

while the other group replied verbally. After 3 months, 47 patients were retested by the same examiner with all previous conditions duplicated. Product moment correlations for all groups were calculated separately for the N (neuroticism), E (extraversion), and L (lie) scales. The remaining 2 groups of Ss (12 each) were tested for inter-examiner reliability. The results indicated that (1) the most satisfactory method of administration is having the examiner record the patient's answers; (2) the examiner has a significant effect upon the "L" scores, as one examiner produced more "lies" than the other' and (3) the reliability of this scale is insufficient for it to have predictive value in the individual case. (1 ref.) - *B. Bradley.*

Manor Hospital
Epsom, Surrey, England

1890 DENHOFF, ERIC, SIQUELAND, MARIAN L., KOMICH, M. PATRICIA, & HAINSWORTH, PETER K. Developmental and predictive characteristics of items from the Meeting Street School screening test. *Developmental Medicine and Child Neurology*, 10(2):220-232, 1968.

The Meeting Street School Screening Test is a compilation of items culled from a pediatric-neurological team evaluation. A relationship between increasing numbers of items failed and increasing percentages of school failure and under-achievement in first grade children has been demonstrated. The developmental, sex difference, and stability characteristics of the items have been analyzed and discussed. (6 refs.) *Journal summary.*

Meeting Street School
Children's Rehabilitation Center
Providence, Rhode Island

1891 MALIN, ARTHUR JOHN. Psychological tests for retarded Indian children *Journal of Rehabilitation in Asia*, 9(1):32-33, 1968.

A history of mental testing in India and an account of tests currently in use are presented in the context of a discussion on the difficulties of finding appropriate psychological tests for MR children in India. Means of identifying MR in Indian children of all ages are also described. India's modern mental testing began as research exercises and resulted in tests based on small regional samples. Other tests were adapted from Western tests. The choice of tests available for diagnostic assessment of MR Indian children is presently very narrow. Only 4 or 5 major language areas have tests; this means that for a minimum of 30 percent of India's children, there are no tests available other than performance scales. However, several foreign tests can be given if the examiner makes the necessary local adaptations and uses local norms. The development of psychometric testing in India should proceed with an extra-regional outlook. (10 refs.) - *L. Spade.*

No address

1892 RENNICK, PHILLIP M., & HALSTEAD, WARD C. Color-naming, delayed speech feedback and cerebral dysfunction. *Journal of Clinical Psychology*, 24(2):155-161, 1968.

A task of color naming differentiated significantly between a group of children with diffuse cerebral dysfunction and a group of neurologically normal children. Identification of children with disabilities resulting from cerebral dysfunction was attempted with 82 Ss by means of tasks involving speech motor mechanism. Forty-one of the Ss were from a school for brain-damaged children, and 41 individually matched normal control Ss were from a public school. Of the 41 experimental Ss, 23 were classified as cases of congenital cerebral dysfunction (DCD), and 18 were neurologically normal (Non-DCD). The number of errors made in naming 3 colors under timed conditions or "as fast as possible" and with either simultaneous (SSF) or delayed speech feedback (DSF) were recorded. Analyses of variance were calculated for the error scores under timed conditions and for the time score when Ss worked "as fast as possible." The error and timed scores were significantly higher for the DCD group than for either the Non-DCD or the control groups. The error and timed scores were significantly higher for the Non-DCD group than for their control group. DSF made the error and timed scores higher for all groups but reduced the difference in error scores while having no differential effect on time scores. The usefulness of the task, which

was as great under SSF as DSF, raises the possibility that a simplified version may be developed. (8 refs.) - *L. Spade.*

*University of Chicago
Chicago, Illinois 60600

1893 KRAFT, MARCIA B. The face-hand test. *Developmental Medicine and Child Neurology*, 10(2):214-219, 1968.

A longitudinal study of the face-hand responses of 59 children, aged 5, 6, and 7 years, is reported. An immature response was found in 86 percent of 5-year-old children, 46 percent of 6-year-old children and 22 percent of 7-year-old children. Responses to the test do not correlate with the mental age as measured by the Goodenough Draw-A-Man Test. The data suggest that an immature response is found more commonly among 7-year-old non-readers than among 7-year-old children who can read. A standard method of testing is described and offered as one of a battery of tests for minor manifestations of cerebral dysfunction (9 refs.) - *Journal summary.*

12123 Willow Wood Drive
Silver Spring, Maryland 20904

1894 BURNAND, G., HUNTER, H., & HOGGART, K. Some psychological test characteristics of Klinefelter's syndrome. *British Journal of Psychiatry*, 113(503): 1091-1096, 1967.

Fourteen males (CA, 17-53 yr) with chromatin positive Klinefelter's syndrome who were residing in subnormality units were matched for age and IQ with 14 other in-patients (CA, 17-58 yr) and given a series of psychological tests. In contrast to previously reported findings, performance was not significantly higher than verbal IQ on the Wechsler Adult Intelligence Scale. Differential results on the Porteous Maze and Rorschach showed the Klinefelter men to be more aggressive, impulsive, "delinquent," and labile than the controls. Semantic Differential, Draw a Person, and Word Association tests suggested feelings of sexual deprivation, sexual preoccupation, and defensiveness about sex in the Klinefelter group. (6 refs.) - *E. L. Rowan.*

Balderton Hospital
nr.Newark, Notts, England

1895 WISE, JAMES H. Performance of neurologically impaired children copying geometric designs with sticks. *Perceptual Motor Skills*, 26(3,I):763-772, 1968.

The visual-motor performance of 34 brain-damaged children was compared with that of an equal number of children without neurological impairment but matched for IQ, age, and sex. Performance involved the copying of geometric designs with sticks rather than drawings. A 14-category rating system was used to evaluate performance. Results indicated statistically significant performance decrement for the brain-damaged Ss, variations in sensitivity among designs and scoring categories for registering performance decrement, and low-to-moderate correlations between test performance and intelligence, age, and mental age. Such results encourage further development of a stick test for young and neurologically impaired children. (11 refs.) - *Journal abstract.*

George Washington University
Washington, D. C. 20006

1896 FRANCIS-WILLIAMS, JESSIE, & YULE, WILLIAM. The Bayley infant scales of mental and motor development: An exploratory study with an English sample. *Developmental Medicine and Child Neurology*, 9(4):391-401, 1967.

Revised versions of Bayley's Infant Scales of Motor and Mental Development given to 300 English infants (CA 1-15 months) demonstrated no differences between sexes or social classes but did show higher mental scale point scores for only children. The purpose of the study was to discover if this test could be appropriately applied to the testing of English infants. Most infants in the study were attending maternity and child

welfare centers. Those infants with neurological disorders or a history of low birth weight were not included. The split-half reliabilities for the Motor and Mental Scales at each age group compared favorably with results obtained in other studies employing a variety of developmental scales. The Motor Scale at 4 months of age had low reliability. The scales appeared to be valid indices of infants' motor and mental development. The 2 scales were not wholly independent, and it was recommended that both scales be used in order to obtain more reliable results. First-born and only children scored higher on the Mental and Motor Scales, but only the former scale reached statistical significance. When compared to the American infants, the English babies were superior in tasks involving midline skills but were inferior in pulling to a standing position. This may be related to cultural differences in child-rearing practices such as sleeping positions. (17 refs.) - *R. Froelich.*

Department of Child Development
Institute of Education
London, W. C. 1. England

1897 VANE, JULIA R. The Vane Kindergarten Test. (Special Monograph Supplement.) *Journal of Clinical Psychology*, 24(2):121-154, 1968.

A test was developed for evaluation of the intellectual and academic capabilities and behavioral adjustment of kindergarten children. The Vane Kindergarten Test (VKT) is composed of 3 subtests: the perceptual motor and man subtests, which can be administered to groups of 10 to 12 children, and the vocabulary subtest, which must be administered individually. Population, reliability, and correlational data are supplied. Administration and scoring information is given for all subtests, and examples of scored items are included. In addition, tables for converting scores into IQs are presented. Information is given for evaluating the child's adjustment on the basis of drawings and behavioral signs. With the VKT, a school psychologist can become acquainted with an entire kindergarten population of a school district. Moreover, remedial steps can be taken for individuals before they begin to fail. The VKT should be of interest to researchers, psychologists, and educators. (27 refs.) - *L. Spada.*

CONTENTS: The Vane Kindergarten Test; Administration and Scoring; Scoring; Standardization; Case Studies.

1898 RAPOPORT, D. Les baby-tests et leur utilisation en France. (Baby tests and their use in France.) *Medecine Infantile*, 75(1):67-72, 1968.

Baby tests are useful and indispensable tools in determining normal mental and psychomotor development in the infant; they may also be extended to preschool children. They are usually administered to those between 1 month and 3 years of age. The principal tests used in France are the Gesell and the Brunet-Lezine. The former is based on the Gesell Inventory for motor-verbal development and personal-social relations. The disadvantages of the Gesell are that it requires extended observation of the child and takes a long time to administer. The Brunet-Lezine permits the DQ to be calculated from a test constructed and standardized in France. Its advantages are: (1) simple and rapid administration, (2) provision of immediate scoring, (3) calculation of partial, postural, verbal, oculomotor and social DQ, (4) inclusion of a questionnaire, and (5) highly motivating material. Other tests available include the Lezine scale of visual adaptation for use with handicapped children and the Piaget-Casati-Lezine Scale for development of sensory-motor intelligence. (5 refs.) *S. Katz.*

No address

1899 BLOCH-LAINE, F. Tests de niveau mental en pedo-psychiatrie. (Intelligence tests in child psychiatry.) *Medecine Infantile*, 75(1):57-65, 1968.

The validity of IQ tests for children is discussed and the advantages and disadvantages of various tests are mentioned. Infant tests (Gesell & Brunet-Lezine) for preschool

children give DQ, which indicates the motor and social development of the infant. Zazzo's revised Binet-Simon test can be used for testing general intelligence of children 3 to 10 years old. The Terman test offers much information concerning aptitude and can be used until a S reaches 18 years of age. Zazzo's new intelligence scale has the advantages of recent standardization, includes the most valid questions of Binet-Simon, and is extended through 14 years of age. Performance tests (Kohs & Porteus) are recommended for deaf, foreign, or verbally retarded children. The Wechsler Intelligence Scale for Children offers the advantage of verbal and non-verbal batteries. Drawing tests (Bender, Rey-Osterrieth, Benton) not only yield IQ scores, but also reveal considerable information about the child's personality through analysis of his drawing. The psychologist should be aware of whether or not he is getting maximum cooperation from his patient. His attitude should not be too rigid or impersonal. Although an IQ test can indicate the scholastic potential of the child, social adjustment cannot be based on IQ. An isolated IQ score without the confirmation of other tests might lead to erroneous conclusions concerning the future of the child. (No refs.) - *S. Katz.*

No address

1900 ALLEN, ROBERT M. Experimental variation of the mode of reproduction of the Bender-Gestalt stimuli by mental retardates. *Journal of Clinical Psychology,* 24(2):199-202, 1968.

Thirty-six MRs with a mean CA of 171.2 mo, mean MA of 77.4 mo, and mean IQ of 53.3 (Peabody Picture Vocabulary Test) were given the Bender-Gestalt Test under variable conditions and served as their own controls. Reproductions were scored on the Keogh-Smith 5-point rating scale. The Ss obtained a higher score when copying each model design onto a similar 4 x 6 card placed parallel to and beneath the stimulus card than when copying onto a single large sheet of paper, regardless of the order in which these tasks were done. The level of intelligence within this MR group was positively correlated with the Keogh-Smith score, despite the overall perceptual immaturity revealed by the Frostig Developmental Test of Visual Perception. (5 refs.) - *E. L. Rowan.*

University of Miami
Coral Gables, Florida 33146

1901 KOHEN-RAZ, REUVEN. Mental and motor development of kibbutz, institutionalized, and home-reared infants in Israel. *Child Development,* 39(2):489-504, 1968.

Three hundred and sixty-one Israeli infants, ages 1-27 months, reared in kibbutzim (N= 130), institutions (N=79) and private middle-class homes (N=152) were given the Bayley Mental and Motor Tests. The kibbutz and private-home infants performed significantly higher on the mental scales, but were equal on the motor scales when compared with the U. S. normative population. Kibbutz infants performed on the same level as the Israeli private-home infants. Institutionalized Ss were significantly retarded mentally and motorically in relation to the U. S. and Israeli noninstitutionalized populations. Mothers' education and preference for outside work were positively related to the mental level of male infants in the private-home sample. Eye-hand coordination and walking appeared relatively less variable cross-culturally and intraculturally than capacity to recover hidden objects, language functions, keeping body equilibrium, and fine motor coordination. (18 refs.) - *Journal abstract.*

Hebrew University
Jerusalem, Israel

1902 GARDNER, WILLIAM I. Use of the California Test of Personality with the mentally retarded. *Mental Retardation (AAMD),* 5(4):12-16, 1967.

Questions are raised concerning the reliability, validity, and administration of the California Test of Personality (CTP) as a measurement of the personality traits or personal-social adjustment characteristics of the MR. The elementary level of the CTP was administered to 105 EMRs attending 8 public school special education classes in 2 different school systems. The Ss were between 10 and 16 years of age and had IQs in the 51-80 range on the Stanford-Binet or Wechsler scales. The CTP was read aloud to small groups; then 58 Ss were given an immediate retest, while 47 Ss completed the retest after a 14-day delay. On immediate retest, Ss changed 16.3 percent of the items on Personal Adjustment (PA), 14.3 percent on Social Adjustment (SA), and an average of 15.3 percent on Total Adjustment (TA) scores. On a 2-week retest an average of 29.1 percent of the PA, 28.1 percent of the SA, and 28.6 percent of the TA items were

changed, with no significant differences evident in direction of change. These high percentages of score changes are viewed seriously in interpreting the scores in that they suggest a limited amount of confidence, not only on individual items but on subtest scores as well. The 8 teachers involved were asked to list 4 Ss who demonstrated the best overall personal and social adjustment and 4 who demonstrated the poorest adjustment. A 31.25 percent agreement was obtained for both the top and bottom lists, with 30 percent reversals. This indicates that the teacher's perception is different from performances noted on the CTP. Confounding factors are: (1) language skills, (2) self-denial in answering questions, (3) experience, (4) social class and present environment of the MR. These factors must be considered if useful information is to be obtained or if errors are to be avoided when using the CTP with an MR population. (13 refs.) - *J. Melton.*

University of Wisconsin
Madison, Wisconsin

1903 RABIN, A. I. Assessment of abnormalities in intellectual development. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development.* New York, New York, Grune & Stratton, 1967, Chapter 24, p. 429-446.

Research data which evaluate abnormalities of mental development suggest that there are differences in the intellectual growth patterns and in the structure of intelligence of normal and MR children. The IQs of both normals and MRs fluctuate over the years. However, in contrast with the patterns of average and bright children, the intellectual growth patterns of MRs evidence a consistent deceleration with age. Data on the structure of the MR's intelligence yield a distinctive short-term memory factor in addition to the general, verbal and performance factors characteristic of both normals and MRs. On the Wechsler Intelligence Scale for Children (WISC), performance ability is superior to verbal ability for familial MRs. This WISC pattern tends to be reversed for brain-injured MRs. The effects of schizophrenia on intelligence tests scores are unclear. It appears that, while schizophrenics are not intellectually defective they are less developed intellectually in comparison to peers and siblings. Although anxiety and intelligence are correlated in normal children, the evidence does not support this relationship for MRs. Research requirements in the area of intellectual development include: longitudinal studies with differential MR groups; specific and clearly defined studies on the relationship between institutionalization and intellectual development; studies on the effects of specific, well-defined areas of brain-injury; and investigations of the relationship between type and intensity of emotional disturbance and intellectual deficit. (38 refs.) - *J. K. Wyatt.*

1904 POLLACK, MAX. Mental subnormality and "childhood schizophrenia." In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development.* New York, New York, Grune & Stratton, 1967, Chapter 26, p. 460-471.

A survey of 13 studies on the distribution of intellectual functioning in "schizophrenic" children found that the IQ scores of 1/3 to 1/2 of the Ss were below 70 and that only 1/3 were within the "normal" range. Age at time of diagnosis appeared to be a critical variable, for incidence of MR was higher in preschoolers than in preadolescents. Retest scores were highly stable, particularly for children with scores in the lower range. Several follow-up studies demonstrated a significant correlation between low IQ and poor outcome. The IQ scores of the "schizophrenic" children in 4 studies were significantly lower than those of a group of children with non-schizophrenic behavior disorders who were used as clinical controls. Incidence of brain damage in "schizophrenic" children was high and was frequently associated with a history of prenatal complications. Neurological abnormality of the CNS was generally in the area of higher mental functions and integrative abilities. The diagnostic term "childhood schizophrenia" is broadly used to describe widely diverse subgroups, and this practice obscures rather than clarifies the identification of the etiological bases for this severe childhood behavior disorder. The term chronic brain syndrome appears to provide a more relevant diagnostic description than the term "childhood schizophrenia." (38 refs.) - *J. K. Wyatt.*

1905 EISENBERG, LEON. Clinical considerations in the psychiatric evaluation of intelligence. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development.* New York, New York, Grune & Stratton, 1967, Chapter 28, p. 502-513.

A variety of studies in which the identification of the sources of differential performance led to a clearer understanding of the data illustrate the importance of identifying all the elements which affect performance behavior on intelligence measures so that sources of failure can define areas where remedial treatment is needed. Intelligence tests measure intelligent behavior, and behavior is affected by a variety of extrinsic and intrinsic factors which, when identified, can be manipulated to improve individual adaptive and creative capacities. Factors which affect test performance are: social class, listening ability, hearing ability, expectation of success or failure, task salience, motivation, reinforcement structuring, attention-sustaining and impulse-inhibiting abilities, tutoring, training, and environmental enrichment. (19 refs.) - *J. K. Wyatt.*

TRAINING AND HABILITATION

Education

1906 GOLDSTEIN, HERBERT. The efficacy of special classes and regular classes in the education of educable mentally retarded children. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development.* New York, New York, Grune & Stratton, 1967, Chapter 32, p. 580-602.

Experimental group Ss (mean IQ, 74.2) who attended special classes for the first 4 years of school were better adjusted at home and at school than control group Ss (mean IQ, 79.9) who attended regular classes, while experimental Ss with IQs below 80 were superior to control Ss with IQs below 80 in arithmetic computation, problem solving, basic social studies information, language achievement, spelling, oral reading, word recognition, tachistoscope word recognition, and sound blending. Both groups gained approximately 11 months in Stanford-Binet Intelligence Test scores during the first year of the study and approximately 40 months in MA during the entire study. There were no significant differences between the groups in the degree of IQ gain made, but there was a tendency for control group Ss with IQs above 81 to achieve higher academic scores than those of experimental Ss with IQs above 81. Control Ss were consistently superior in word discrimination and reading comprehension. These findings suggest that special classes based on inductive teaching methods which provide careful observation and evaluation as well as integrated, individualized, balanced programs of academic and social learning should be provided for EMR children with IQs below 75 at the beginning of their school careers. (20 refs.) *J. K. Wyatt.*

1907 SAUTER, JOYCE. Philosophy, goals, and curriculum. In: Scheerenberger, R. C., ed. *Training the Severely and Profoundly Retarded. (Mental Retardation in Illinois,* Monograph Supplement #3.) Springfield, Illinois, Department of Mental Health, 1967, p. 23-38.

Curriculum planning for the MR is discussed from the standpoint that it involves many areas including philosophy and goals. Teachers are curriculum planners and primary decision makers in education. Curriculum planning includes: (1) determination of educational directions; (2) choice of principles and procedures for ordering the experiences comprising the instructional program; (3) selection of a pattern of curriculum organization; and (4) determination of principles and procedures by which changes can be made, evaluated, and sustained. It involves continuous effort, cooperative participation in studying needs and problems, comprehensive interpretations, and concrete results in written form. An understanding of the entire school program aids in planning and evaluation of those areas selected for change and improvement. Educational objectives as diagramed by Hornack derive their basis from a philosophy of democracy, the basic needs of the learner, and the characteristics of contemporary society. The

retardate must have the realization that he can contribute to society even though his contribution may be limited to working on simple tasks or in sheltered work programs. Although the needs of the retarded are similar to those of normal children, in meeting these needs the teacher should recall that the 2 groups do differ in ability. Objectives for trainable children are dependent upon the demands of contemporary society. A rural setting allows for different responses than a complex urban environment. It is suggested that educational objectives for trainables should be broken down into a continuum or typology. The curriculum should reflect the characteristics of the children for whom it is designed; therefore, the person planning the curriculum should have experience with the type of children for whom it is intended. Short attention span, limited incidental learning, and difficulty in abstracting may be problem areas meriting special attention in curriculum planning for this population. The planning should be a cooperative endeavor, especially in the education of the MR child. (29 refs.) *B. Bradley.*

1908 JACOBS, JOHN F., CUNNINGHAM, MYRON A., PIERCE, MARNELL L., & CORTAZZO, ARNOLD D. Slow learner problem in the classroom. *Florida Educational Research and Development Council Research Bulletin*, 3(4):1-32, 1967.

When a questionnaire assessing 16 problem areas or characteristics usually associated with slow learners was completed by the teachers of 1,912 normal (IQ above 90) and 562 slow-learner (IQ range 70-89) Florida students in grades 2-7, and 9, the results revealed that the mean incidence of these characteristics and behaviors was 2.59 for slow learners and less than 1 for normals. Each teacher indicated the 3 students in the class who were best described by each of the 16 criteria. Among the slow learners, 30.2 percent were selected as exhibiting 4 or more of the criterion characteristics and behaviors, 63.8 percent were chosen as evidencing at least one of the criteria, and 36.2 percent were not judged to be among the 3 students in the class possessing the greatest degree of any of the behaviors. The problem areas and characteristics included in the questionnaire were: emotional problems; social immaturity; adjustment needed in materials and methods; display of interest, initiative, and motivation; absenteeism; attention-seeking behavior; establishing rapport with the teacher; poor written and spoken language; reading; teacher time required; peer relations; academic achievement; dislike for school; poor judgment and ability to abstract and generalize; discipline; and general health. The findings of this study support the hypothesis that the problems of slow learners are similar to those of MRs and indicate that school administrators, curriculum specialists, and teachers should not expect slow learners to follow the same curriculum as normal classmates but instead should make special provisions to meet their needs and problems. (50-item bibliog.) *J. K. Wyatt.*

1909 WILLIAMS, PHILLIP, & GRUBER, ELISABETH. *Response to Special Schooling.* New York, New York, Humanities Press, 1968, 160 p. $2.75.

An investigation of file data on 161 educationally subnormal (ESN) children (CAs 7 to 14 years) who comprised a 1 in 5 sample of ESNs attending 8 special schools in South Wales revealed a median IQ of 70, an over representation of lower class children, and a preponderance of summer birthdays among lower class boys. The majority of those children with IQs over 70 were boys. Between-group differences were found in a further investigation of data on 57 ESN children transferred back from the special schools to the ordinary school system (the S group) and data on 47 ESN children who were deemed to be unsuitable for education in the special schools (the E group). S-group children appeared to have environmental handicaps, while the handicaps of children in the E group seemed to have neurological or organic origins. Intelligence test scores for E-group children were ascertained earlier and were lower than those of S-group children. Respective mean IQs for the two groups were 55 and 73. Additional congenital and environmental items which distinguished the E group from the S group were: (1) late development of speech, walking, and toilet training and (2) a high incidence of infancy disturbances and speech defects. Although the general picture of the S group was unclear, early developmental data on the children were normal, and family situation differed significantly from that of the E group in that (1) there was more anxiety over family finances, (2) there were more families where the mother was either working or absent, (3) fathers had poor health records and lacked higher education, and (4) more siblings attended special classes and schools. Psychologists and educators

interested in learning about the characteristics of children in special schools will find this book of interest. (141 refs.) *J. K. Wyatt.*

CONTENTS: Educational Subnormality; The Design; The Normal Sample; Some Comparisons; The E Group; The S Group; Conclusions.

1910 RADIN, NORMA, & WEIKART, DAVID. A home teaching program for disadvantaged preschool children. *Journal of Special Education*, 1(2):183-190, 1967.

The Perry Preschool Project assessed the long-term results of daily 3-hour classes and weekly 90-minute home teaching on the intelligence of 24 functionally EMR, culturally deprived, Negro children (CA, 3-4 yr). Objectives of home visits included individualizing instruction and acquainting parents with the educative process. During such visits, mothers were encouraged to participate, and over 2/3 of the mothers were active in the tutorial sessions. Physical conditions in the home which caused most difficulty were overcrowding and poor lighting, but such problems were not overwhelming. Although interest was maintained during the second year of the program, participation did not improve. The mean Stanford-Binet IQ gain of the children was 17 points. Public housing residents made significantly less IQ gain (.01 level) than those in other types of housing. Moreover, although the disadvantaged parents supported a home instructional program, their interaction with their children was not altered greatly. Programing curricula to meet individual needs seemed more crucial to IQ gain than raising the degree of parental involvement. (8 refs.) - *R. D. Perkins.*

Ypsilanti Public Schools
Ypsilanti, Michigan

1911 BEST, GARY A. State provisions for home instruction. *Exceptional Children*, 34(1):33-36, 1967.

State provisions for home instruction (HI) were surveyed nationally in 1966 via a letter sent to each state department of education. In this report of that survey, data from the 47 responses are categorized as to: state aid formulas, types of exceptionality served, criteria for eligibility, limits on instructional time, certification requirements, telephone teaching provisions, and supplementary services. Related categories subsumed under each of the above are presented in outline form. Analysis of the data is limited due to the inconsistencies in the quality and quantity of information received. Some trends indicate that telephone teaching is a prevalent source of HI. There is an insignificant gain in services for the emotionally and socially disturbed. The situation could be improved if HI would utilize more of the teaching aids, methodology, and technology that pervade today's education. (3 refs.) - *G. Trakas.*

Department of Special Education
University of Minnesota
Minneapolis, Minnesota

1912 DARRAH, JOAN. Diagnostic practices and special classes for the educable mentally retarded--A layman's critical view. *Exceptional Children*, 33(8):523-527, 1967.

Justification for establishing and maintaining special classes for the EMR in California is questioned. Comparative studies (regular versus special class training) in academic performance and social adjustment indicate no appreciable difference in the EMR's adjustment to the normal community. The EMR's social adjustment to his peers is improved within the selective environment of the special class; however, research is inconclusive as to whether academic performance attained through special class training is greater than that achieved in a regular class. Responsibility for mediation in the special education system lies with the professionals who initiate programs, select teachers, and determine course content. (18 refs.) - *D. Jones.*

660 West Monterey
Stockton, California 95204

1913 PIETZNER, CARLO, ED. *Aspects of Curative Education.* Aberdeen, Scotland, Aberdeen University Press, 1966, 309 p. $4.95.

Inaugurated by Karl König in 1940 for the purpose of working with MR children and adults, the Camphill Movement has always been guided by the philosophy of curative

education. In its basic principles, curative education focuses on utilizing diagnostic and therapeutic activities directed toward acheiving and facilitating the balanced development of the whole child. The authors of this collection of essays and articles are all members of the Camphill Movement and are engaged in developing and practicing curative education. The aspects discussed here include diagnosis, therapy, care, education, social development, and mental handicap. The principles of curative education have been successfully used in planning residential schools for exceptional children, in developing music therapy, and in educating handicapped and disturbed children. Educators, psychologists and psychiatrists interested in the work of the Camphill Movement and in curative education will find this book of interest. (160 refs; 13-item bibliog.) - *J. K. Wyatt.*

CONTENTS: Some Fundamental Aspects of Diagnosis and Therapy in Curative Education (König); The Care and Education of Handicapped Children (König); Differential Diagnosis of Backward Children (Weihs); Social Development in Handicapped Children (Müller-Wiedemann); Mental Handicaps (Gartner); The Human Soul (König); The Post-Encephalitic Syndrome in Early Childhood (Müller-Wiedemann); Psychotic Children (Weihs); The Child Suffering from Cerebral Palsy (Sahlmann);Education of Handicapped and Disturbed Children; Music Therapy in Curative Education (König); The Planning of Residential Schools for Exceptional Children (König); The Child at Play (Bucknall); Rudolph Steiner in His Time (Konig).

1914 KŐNIG, KARL. Some fundamental aspects of diagnosis and therapy in curative education. In: Pietzner, Carlo, ed. *Aspects of Curative Education.* Aberdeen, Scotland, Aberdeen University Press, 1966, Chapter 1, p. 3-20.

The domain of curative education lies in the observation of developmental form tendencies, the diagnosis of areas of development in which abnormalities or an imbalance of form and formative forces exist, and the prescription and application of therapeutic methods designed to achieve a state of formative equilibrium. Although it makes use of medical, psychological, psychiatric, and social diagnostic information, curative education should develop separate diagnostic values of its own based on the study of a specific number of active primal formative tendencies. These tendencies, which work together to achieve a state of balance in the normal child, may develop in a one-sided way and produce obvious symptoms indicative of a child in need of special care. These tendencies are: hydrocephaly and microcephaly, movement and listening, and mongolism and cretinism. (No refs.) *J. K. Wyatt.*

1915 KÖNIG, KARL. The care and education of handicapped children. In: Pietzner, Carlo, ed. *Aspects of Curative Education.* Aberdeen, Scotland, Aberdeen University Press, 1966, Chapter 2, p. 21-29.

Curative care for handicapped children involves diagnosis, treatment, school-education, and care requiring the cooperation of neurologists, psychiatrists, teachers, sociologists, physiotherapists, craftsmen, and gardeners. Diagnostic efforts should be comprehensive; the use of labels which may categorize but not describe the child's nature should be avoided. The treatment of handicapped children requires the use of specific methods designed to handle disorders uncovered by assessment. The majority of MRs require regular teaching and can attend special classes designed in accordance with their abilities and disabilities. Ideal special care for most MR and maladjusted children takes place in the family, not in institutions and residential special-care schools. (4 refs.) - *J. K. Wyatt.*

1916 WEIHS, THOMAS J. Differential diagnosis of backward children. In: Pietzner, Carlo, ed. *Aspects of Curative Education.* Aberdeen, Scotland, Aberdeen University Press, 1966, Chapter 3, p. 30-40.

In order to plan school curricula for backward children, differential diagnoses are needed to distinguish between those with innately limited intelligence and those whose backwardness is not innate. Education for children with innate limits should center around activities appropriate for their MA. Diagnoses for children not in the innate limits group should center around the identification of developmental anomalies. Education should then concentrate on introducing remedial and corrective procedures designed to help the children reach their true intelligence levels. Children with disturbed dominance and laterality and those with large-headed and small-headed conditions require remedial education based on a

combination of unsentimental and unpitying love, compassion, and a thorough awareness of their needs. (No refs.) - *J. K. Wyatt.*

1917 MÜLLER-WIEDEMANN, HANS. Social development in handicapped children. In: Pietzner, Carlo, ed. *Aspects of Curative Education.* Aberdeen, Scotland, Aberdeen University Press, 1966, Chapter 4, p. 41-51.

Children with handicaps that manifest themselves in executive and motor disorders are also handicapped in their ability to use their ego powers of assimilation and metamorphosis of sensory perceptions; they are limited in the development of a social identity by their inability to free their creative and adaptive resources and use them to adjust to the world around them. In his early years the handicapped child limits his own social development by identifying himself with his handicap. His human interrelationships with teachers and parents during the first 3 years should emphasize the provision of whatever security is necessary to allow the ego to widen into experience and facilitate the establishment of the conscious self. In order to facilitate the emergence of the social self, follow-up relationships should foster the development of the equilibrium of sense perception and motor assimilation. Education and training should aim at enabling each child to unfold his individual, specific social self. The child should be helped to regain his creative powers so that he can take advantage of new opportunities offered at the age of puberty. Teacher-child relationships should be conversational and should help the child to acknowledge his limitations and to discover ways in which he can contribute to the community. Communities play an important part in the social development of the handicapped child, for they may function either as mirrors of his handicaps or as pathways to new concepts and new ways of life. (7 refs.) - *J. K. Wyatt.*

1918 GARTNER, MARK. Mental handicap--A challenge. In: Pietzner, Carlo, ed. *Aspects of Curative Education.* Aberdeen, Scotland, Aberdeen University Press, 1966, Chapter 5, p. 52-66.

While the Camphill schools train MRs for reintegration into society, the Botton Village Community run by the Camphill Village Trust, Ltd. is a resident community shaped to meet the living demands of MRs. School emphasis is on helping MRs accept their disability, develop compensating abilities, and find employment. Community emphasis is on individual maturity rather than on intellectual hierarchy. While the Village Council is composed only of staff members, its committees are made up of both staff members and handicapped residents. Village residents live with the families of married staff members and their children in family-sized groups of 5-10 members. Employment is available in farming, forestry, market gardening, and baking as well as in a number of workshops producing articles in great demand on the open market. Initially, employment is based on willingness rather than ability. Each individual is integrated into his job and into the community by assuming responsibility for the performance of a necessary function. Employment is mobile so that when an individual has attained skill in one area he can continue to improve himself by moving on to develop more highly skilled abilities. Decisions about the needs of the community are discussed at the monthly meetings of the Village Assembly. Community residents participate in study groups, a choir, a drama group, and a group which makes and performs with marionettes as well as in common home activities such as reading, playing music or records, games, and helping with household tasks. (5 refs.) - *J. K. Wyatt.*

1919 SAHLMANN, LOTTE. The child suffering from cerebral palsy. In: Pietzner, Carlo, ed. *Aspects of Curative Education.* Aberdeen, Scotland, Aberdeen University Press, 1966, Chapter 9, p. 218-227.

Therapy for children with cerebral palsy (CP) should be directed toward diminishing conditions which cause the absence or distortion of sensory experiences and retard the development of the soul life. The effects of CP on perceptual development may include deficiencies in sight and hearing, monocular vision, impaired awareness of spatial proportions, crippled speech development, hypersensitivity to any external sensory impact, and diminished or absent proprioceptive perception, which in turn reduces or prohibits awareness of personal physical organization. These deficiencies in perceptual development may prevent the CP child from establishing himself as a separate personality distinct from his environment; in this way they also may limit the development of feelings of freedom, well-being, and security and thus effect an immature soul life. (No refs.) - *J. K. Wyatt.*

1920 BLATT, BURTON, & GARFUNKEL, FRANK. Educating intelligence: Determinants of school behavior of disadvantaged children. *Exceptional Children*, 33(9):601-608, 1967.

A 1-year follow-up study observed the effects of a 2-year intervention in education on 74 preschool disadvantaged children. The experiment was based on the premise that "intelligence is educable and that if an appropriate intervention were provided for children destined to become MR, this retardation would be prevented or, at least, mitigated." The principal sample was divided into 2 experimental and 1 control groups through a stratified random assignment using the Stanford-Binet, CA, and sex. A true experimental design was impossible to maintain because deprivation cannot be systematically controlled; thus, the true effect tested was the presence or absence of a preschool program. The research hypothesis was rejected; the measuring variables did not produce conclusive evidence of changes in the S groups. External validity of the study is questioned on the basis of curricula intervention, timing and duration of the intervening experimental instruction, and measurement problems. A continued quest for processes and methods to educate intelligence is encouraged. (2 refs.) *D. Jones.*

Special Education Department
Boston University
Boston, Massachusetts

1921 RAINEY, DAN S., & KELLY, FRANCIS J. An evaluation of a programed textbook with educable mentally retarded children. *Exceptional Children*, 34(3):169-174, 1967.

The TMI Grolier Multiplication and Division Facts Program for teaching intermediate EMR pupils was analyzed and compared for relative effectiveness with 2 other procedures involving rote and understanding. The Ss were 82 pupils (53 boys and 29 girls) enrolled in 8 East St. Louis (Missouri) EMR classes. The mean score on the Wechsler Intelligence Scale for Children was 64.75, and the mean CA was 13.6 years. This population was selected from a larger sample on the basis of performance on the California Achievement Test. The 8 classes were arranged into 3 groups matched for CA, IQ, and reading level. The final groups were: 2 classes (N=20) receiving TMI programed instruction, 2 classes (N=26) receiving rote instruction, and 4 classes (N=36) receiving understanding instruction. The understanding group had lessons which were based on facts from the TMI program, but emphasis was placed on understanding of the arithmetic facts being studied. The rote group received 15 minutes of discussion and demonstration and 45 minutes of worksheet practice on the facts presented, but no attempt was made to explain the facts. The teaching machine group worked approximately 1 hour/day for 4 weeks for a total of 20 hours on the program. There was general acceptance of this program, although attitudes declined toward the end and encouragement was necessary. The teacher-made programs were based on suggestions from the attention theory of Zeaman and House. Findings demonstrated that the rote approach is highly significant for learning division facts. If the Ss are reading above the 2.3 grade placement in reading achievement, they benefit more from programed instruction. However, the understanding group does poorer on the arithmetic reasoning when there is a higher individualized reading level within the group. (10 refs.) - *B. Bradley.*

Southern Illinois University
Carbondale, Illinois

1922 LOVE, HAROLD D. *Exceptional Children in a Modern Society*. Dubuque, Iowa, Wm. C. Brown, 1967, p. 171. $5.50.

The contents of this book are concerned with exceptional children and are designed to provide undergraduates and beginning graduate students with a general overview of exceptionality. Types of evaluative instruments used in assessment of exceptional children are cited as well as additional source materials. This book serves as an introductory text rather than a highly detailed manual. Material related to the MR is provided with brief discussions of etiological factors, classification, history, clinical types, and education. Special attention is given to parental attitudes concerning exceptional children. The category defined as minimal brain dysfunction is discussed as applying to those children who manifest an educational discrepancy between their mental capacity for learning and their actual functioning level. Most of the material relating to children of this type concerns diagnostic techniques. Today, the

education of the exceptional child is a cooperative function of the home, the school, the institution, and many other agencies. Information is provided for students who desire a general view of this broad field. (254 refs.) - *B. Bradley.*

CONTENTS: My Child Is Different; The Mentally Retarded; The Gifted; The Blind and Partially Sighted; Speech Problems; The Deaf and Partially Hearing; Orthopedic and Health Impaired Children; Socially and Emotionally Maladjusted Children; Minimal Brain Dysfunction; Parental Attitudes Toward Exceptional Children.

1923 BERLIN, IRVING N. Consultation and special education. In: Philips, Irving, ed. *Prevention and Treatment of Mental Retardation.* New York, New York, Basic Books, 1966, Chapter 17, p. 279-293.

Consultation services may be used to help teachers of MRs to (1) find ways to obtain satisfaction from their work and (2) cope with disturbed student behavior and disturbing parent demands. Teachers need assistance in order to assess the present functioning and probable potential of their students with greater accuracy; to be more attentive to behavioral and adaptive aspects of functioning that retard learning; to interpret the possible meaning of disruptive, isolating, or destructive behavior; and to handle unexpressed or distorted expressions of needs by finding suitable expressions. They must be helped to get a sense of accomplishment from even the most minute increments of learning or changes in the child's behavior and to reduce their own self expectations so that they do not emphasize the accomplishment of major shifts in students' capacities. Disturbed parents identify with teachers' attitudes toward their child when teachers provide time to discuss the child, listen with understanding to angry complaints and demands, and present a realistic evaluation of present functioning and a hopeful and realistic assessment of the steps necessary to advance learning and social adaptation at school and at home. Understanding and acceptance of parents' feelings of hostility by the teacher frequently provide the groundwork for teacher-parent collaboration to help the child, the family, and the school. (20 refs.) - *J. K. Wyatt.*

1924 GOLDSTEIN, HERBERT. Preschool programs for the retarded. In: Philips, Irving, ed. *Prevention and Treatment of Mental Retardation.* New York, New York, Basic Books, 1966, Chapter 15, p. 247-261.

Effective preschool programs for MRs should anticipate and accommodate gaps, imbalances, and insufficiencies in cognitive and perceptual development by involving the child at the earliest possible age and should focus continuously and directly on growth and developmental factors which might limit social and occupational functioning at maturity. Such programs would require careful evaluation of administrative principles; medical-psychologic diagnostic data which could be used for individual planning and management; flexible curriculums designed directly to attack abnormalities and deformities as they become obvious; competent, specially-trained teachers and supporting-guiding staffs; and specially designed facilities. Broad undifferentiated programs based on the assumption that MRs represent a homogeneous group have a low probability of making a difference in the development of the MR child. The effects of past programs concentrated on self-care, socialization, and economic usefulness are negligible. Early intervention which is relevant to the developmental characteristics of the child can be effective. (11 refs.) - *J. K. Wyatt.*

1925 BRABNER, GEORGE, JR. The school years--Program design. In: Philips, Irving, ed. *Prevention and Treatment of Mental Retardation.* New York, New York, Basic Books, 1966, Chapter 16, p. 262-278.

Major needs which should be considered and satisfied in the designing of public school special education programs for EMR children include: (1) the use of a consistent definition of MR by teachers and administrators involved in a program; (2) the inclusion of an MR diagnostic program which identifies etiologic factors and suggests psychological, medical, and/or educational treatment; (3) clarification of the teacher's role by the administration; (4) integration into the curriculum of recent technological advances in education; (5) adoption of policy concerning integrated or segregated programs and experimental verification of the pros

326-079 O - 68 - 9

and cons associated with the segregation-integration controversy; and (6) new approaches to curriculum construction. Until the present time, curricula for MRs have generally proven to be irrelevant and have illustrated the need for rethinking aimed at the development of a curriculum model. Harlow's concept of learning-to-learn, broadly interpreted as the fostering of the ability to learn, might be used either alone or in combination with cognitive development activities suggested by the work of Piaget, Guilford, and Moore as the basis of such a model. (31 refs.) - *J. K. Wyatt.*

1926 COLWELL, CECIL N. Teaching the profoundly retarded child through behavior shaping techniques. In: Scheerenberger, R. C., ed. *Training the Severely and Profoundly Mentally Retarded.* (*Mental Retardation in Illinois*, Monograph Supplement #3.) Springfield, Illinois, Department of Mental Health, 1967, p. 81-89.

Behavior shaping techniques based on a combination of operant and classical conditioning techniques and used in teaching the profoundly retarded at Pinecrest State School, Pineville, Louisiana, are described in terms of major principles and necessary qualities of a good instructor. Reliance upon MA and IQ has resulted in selective programs for retardates, for children within certain IQ ranges were considered educable and all below that score automatically were excluded from academic programs. An S-R reinforcement paradigm, which is the foundation for programed learning and the teaching machine, is frequently used in teaching complex skills to retarded youngsters. This method of training utilizes the principles of (1) positive reinforcement, and (2) rewarding each improvement toward a desired goal. Complex tasks are broken down and one part is taught at a time. This approach is based on rewarding successes and preventing the child from experiencing failures. In teaching a new skill the instructors always make certain that the child understands what he is being required to do. The last step in completing a skill should be taught first. Examples of specific task sequences are presented. It appears that neither intelligence nor education makes a good instructor; rather, the characteristic features seem to be ability to adjust to new ideas, to stay on schedule, to be consistent and even in temperament, to get along with others, to speak clearly and distinctly and be able to use gestures, and to keep an objective attitude toward the child. (11 refs.) *B. Bradley.*

1927 McNAB, ELAINE L. Educational evaluation of the child in a day center for the mentally retarded. In: Scheerenberger, R. C., ed. *Training the Severely and Profoundly Mentally Retarded.* (*Mental Retardation in Illinois*, Monograph Supplement #3.) Springfield, Illinois, Department of Mental Health, 1967, p. 55-64.

The problem of assessing training programs of the moderately and severely retarded is discussed in relation to educational evaluation of the child in a day-care center. Knowledge of the retardate's progress in training may be directed toward 4 objectives: (1) to determine if the child has learned what has been taught, (2) to advise parents and coordinate home and school training, (3) to analyze the curriculum, and (4) to provide the teacher with knowledge of results. Although report cards and check lists are widely used in evaluating the child's progress, the basic result of this type of report is that the reasons for the child's inability to learn are not analyzed. A check list which gives more information may be too cumbersome and yet not sufficient to provide the degree of detail necessary for evaluation. Anecdotal records or behavioral journals may record only negative rather than positive behavior. Effective evaluative tools are available, however. The Cain-Levine Social Competence Scale consists of 44 items to measure the social competence of TMR children. It has 4 subscales: self help, initiative, social skills, and communication. This scale allows for percentile ranks to aid in selection of children and curriculum as well as research data. The Vineland Social Maturity Scale allows sampling of practical social skills to determine to what degree the child can care for himself without assistance. The TMR Performance Profile was designed for use and administration by the classroom teacher. Its 6 major areas include social behavior, self care, communication, basic knowledge, practical skills, and body usage; each area is subdivided into 4 related topics. Step-by-step evaluation is of basic concern in this scale. Reports to parents should contain the school's objectives as

well as reports of the child's progress toward these goals. Evaluation should aid in improvement of curricula since it should be based on the child's present abilities so that maximum potential can be reached. (8 refs.) - *B. Bradley.*

1928 BIGGE, JUNE L. Expected learning often comes through unexpected teaching. *Exceptional Children*, 34(1):47-50, 1967.

Various direct and indirect techniques are projected for use in teaching children with learning problems. Kinesthetic, auditory, and visual modalities include conditioning to noise and other distractions as a factor in learning arithmetic and the placing of quick drying glue on the lines of a writing tablet to serve as a guide to good writing and as a silhouette for other work assignments. Work involving forms, configurations, lines, and writing may be done outdoors on cement slabs with water and brushes to increase visual, auditory, and kinesthetic acuity. Marking a book with a yellow marker will aid the child who has problems in keeping his place while reading. Kinesthetic practice is experienced by writing words or letters on sandpaper. Other concrete experiences in learning include: field trips to check immediate and late recall, hand-eye coordination activities, tape recordings, paper and pencil games, and television assignments. These exercises are suggested for both regular and special teachers as methods for teaching children who fail through conventional procedures. (No refs.) - *G. Trakas.*

Department of Education
San Francisco State College
San Francisco, California

1929 MÜLLER-WIEDEMANN, HANS. The post-encephalitic syndrome in early childhood. In Pietzner, Carlo, ed. *Aspects of Curative Education.* Aberdeen, Scotland, Aberdeen University Press, 1966, Chapter 7, p. 189-206.

Because of the frequent difficulty of establishing encephalitic etiology and because some of the personality phenomena included in the post-encephalitic syndrome are similar to those found in brain-injured, psychotic, and sensory emotional deprivation syndromes, the replacement of the term "post-encephalitic syndrome" with the more inclusive term "motor autism in childhood" might prove to be diagnostically useful. The symptoms of the post-encephalitic syndrome are related to the child's stage of development at the time of encephalitis and are due to trauma caused by the interruption of developmental processes rather than to brain pathology in the form of distinct anatomical lesions. Goals and attitudes used to guide the therapeutic treatment of post-encephalitic children should be based on an understanding of the children's problems, repeated attempts to understand the children themselves, constant efforts to help the children establish stable human relationships, the creation of an emotionally stable environment, the use of routines designed to establish sensory-motor equilibrium, and an understanding of and provision for excessive activity caused by motor compulsion. (21 refs.) - *J. K. Wyatt.*

1930 BROWN, VIRGINIA L. Reading instruction. *Exceptional Children*, 34(3): 197-199, 1967.

Thirty EMR children from 15 intermediate-level classes in the Kansas City, Missouri, school district were tested individually, their instructional reading levels assessed, and the assessments compared with teacher-assigned levels for classwork in the same material used in the testing. Findings indicated that 50 percent of the children were accurately placed, 23 percent were underplaced, and 27 percent were overplaced. Two underplacements and 1 overplacement had been made in order to accommodate reading groups. Teachers felt that although many of their children could read well, they could not do the required written work. An achievement grouping pattern was used for reading instruction. In determining a child's reading placement, teachers considered: (1) oral reading, (2) reading records and tests, (3) daily performance, (4) evaluation, (5) influence of grouping, (6) previous experience with the child, and (7) lack of retention and comprehension. Factors which the teachers found helpful in determining a child's success in reading were: (1) workbook performance, (2) teachers' manual, (3) vocabulary tests, (4) written comprehension tests, (5) oral reading and comprehension, (6) word review, and (7) teacher-prepared work. The

clinical teaching model requires diagnostic techniques, appropriate instructional experiences, and continuous reevaluation of programing. Due to its erroneous application in corrective or remedial situations, the instructional level concept may have to be modified for special education. (7 refs.) *B. Bradley.*

George Peabody College for Teachers
Nashville, Tennessee

1931 DOWNING, JOHN. THE INITIAL TEACHING ALPHABET AND EDUCATIONALLY SUBNORMAL CHILDREN. *Developmental Medicine and Child Neurology*, 10(2):200-205, 1968.

The results of using the Initial Teaching Alphabet (i.t.a.) with educationally subnormal (ESN) children are considered in the light of comments by 25 head teachers of ESN schools who have been using i.t.a. The results are generally encouraging. The pupils' motivation and self-confidence are often improved, and some measurable improvement in reading standards is reported. (16 refs.) - *Journal summary.*

Educational Psychology Department
University of London Institute of Education
London, W. C. 1, England

1932 SOLOMON, AMIEL, & PANGLE, ROY. Demonstrating physical fitness improvement in the EMR. *Exceptional Children*, 34(3):177-181, 1967.

A structured physical education program for EMR boys was evaluated to assess changes in physical development resulting from this type of curriculum. The Ss were 42 boys (24 experimental and 18 control) whose Binet IQ scores ranged from 49-85, with a mean of 66.80 and a standard deviation of 9.88. All Ss were enrolled in 1 of 4 EMR classes (Metropolitan School System in Nashville, Tennessee) taught by special educators. The Ss, who were felt to be representative of lower socioeconomic backgrounds, varied in CA from 13 years, 5 months to 17 years, 3 months and ranged in MA from 7 years, 2 months to 12 years, 2 months. Physical fitness was determined by using 3 items of the American Association for Health, Physical Education, and Recreation (AAHPER) Youth Fitness Test. All conversions of raw scores into percentile ranks were made with the Ss's CAs in connection with published AAHPER normative data. Therefore, EMR Ss in this study were compared with nonretardates of comparable age. The retardates performed poorly on initial performance tasks with respect to tests of fitness. Data indicated that the physical fitness of the EMR can be improved through planned and systematic physical education experiences. After a 6-week interval, Ss in the experiment could perform as well as, and sometimes better than, their CA nonretarded comparison-group on 4 measures of physical fitness. Performance-influencing variables such as pre-test scores, failure experiences, and effects of rapport are discussed. (19 refs.) *B. Bradley.*

Vanderbilt University
Nashville, Tennessee 37200

1933 LESAK, ELEANOR. Music activities for the severely mentally retarded and preschool mentally retarded. In: Scheerenberger, R. C., ed. *Training the Severely and Profoundly Mentally Retarded.* (*Mental Retardation in Illinois*, Monograph Supplement #3.) Springfield, Illinois, Department of Mental Health, 1967, p. 109-113.

The goals of a music program in a day care center are described in relation to the basic concerns of special education. Even the most limited children can profit greatly from a skillfully planned and well presented music program. The purpose of a music program is to aid each child in reaching his maximum potential at home, in school, and in the community or other environmental setting. Due to its sub-verbal means of communication, music can be used to establish the contact needed to improve interpersonal relationships; this is especially important for the non-verbal child. Closely structured periods may be motivated by the introduction of music activities into the regular learning session. Daily repetition of finger exercise songs or nursery rhymes coupled with an expectant attitude on the part of the teacher may evoke some response, and even minimal responses from the SMR child may aid in making group contacts that subsequently result in socialization. Body concept and motor games may also be utilized, and a wide variety of materials of this type are available. Since the SMR can respond to

rhythm in music, a band is often successful. Well structured, frequently repeated music activities may help create order and lessen anxiety and tensions. Although music-time should be a period of enjoyment, music can likewise be an important tool in learning. (6 refs.) - *B. Bradley.*

1934 GROVES, LILIAN. Music, movement and mime. *Special Education*, 56(3):9-11, 1967.

Music, mime, and dance were used with 2 groups of adolescent girls (CA, 12-14 and 14-15) in an effort to improve their self-confidence, creativity, and language skills. Each group received a series of 10 lessons with activities varying according to capacities and interests. A scarf dance, written and painted work of previous dances, poetry readings, and skipping and walking to musical beats were used as means of group reaction. The younger group had more behavior problems, were more easily distracted, but had more talent than the older group. In both groups: natural leaders arose, music and mime acted as relief so that feelings could be expressed, age differences had little to do with reactions, and release of tensions enabled the groups to express ideas and feelings in classroom written work. (No refs.) - *J. Melton.*

St. Hild's College
Durham, England

1935 KÖNIG, KARL. Music therapy in curative education. In: Pietzner, Carlo, ed. *Aspects of Curative Education.* Aberdeen, Scotland, Aberdeen University Press, 1966, Chapter 11, p. 253-265.

Before it can be used for both general and specific types of therapy, music must be systematically analyzed into its archetypal elements as well as those elements which have beneficial effects on those with specific forms of illness. General music therapy can be used in curative education by direct application of basic music elements to the needs of each individual child. For example, daily exercises involving listening to and singing simple tunes may be used effectively with children who have difficulty concentrating, while rhythm may be used to give aim and direction to the disturbed limb-organization of children whose restlessness is caused by excessive motor-activity. Special music therapy is used with groups and is directed to the process of the disturbance rather than to the individual. Music therapy with erethic post-encephalitic children involves the use of singing, humming, and breathing exercises in order to lead the breathing process into the region of sensory experience. Paralyzed children having both motor handicaps and emotional disturbance benefit from therapy designed to promote complete relaxation and rhythmic organism by using harmonious combinations of sound, color, and form. (23 refs.) - *J. K. Wyatt.*

1936 GUERNICA, ENEIDA B. The use of a special music therapy technique for intellectual maturation of retarded children. Paper presented at the 91st annual meeting of the American Association on Mental Deficiency, Denver, Colorado, May 15-20, 1967, 13 p. Mimeographed.

A music therapy program developed for MRs utilizes reinforcement of attention, hearing, vision, psychomotor coordination, and vocal articulation to initiate learning. In a 4-year study, 18 male Ss and 2 deaf mutes (IQ, 25-55+) were used to start a rhythm band. The initial organizational phases included selection of musical material and rhythm patterns to be used. Following research on visual stimuli and visual rhythm patterns, music therapy was planned with rhythm calisthenics and speech therapy so that music patterns would be maintained in a variety of situations. Audio stimulations were first presented using sticks, cymbals, triangles, tambourines, and drums. Calisthenics were presented by walking and stepping on lines and dots. Improvements noted in the music therapy class included an effort toward better performance and improved communication among the group. Improvements noted in academic and social areas included increased attention span and better coordination in writing. More research is needed in the use of music therapy techniques to stimulate intellectual maturation of the MR. (No refs.) - *J. Melton.*

Dade County Public Schools
Miami, Florida

1937 BERCHERT, RONALD J. The preschool retardate: Growth and development through arts and crafts. In: Scheerenberger, R. C., ed. *Training the Severely and Profoundly Mentally Retarded.* (*Mental Retardation in Illinois*, Monograph Supplement #3.) Springfield, Illinois, Department of Mental Health, 1967, p. 103-107.

The employment of arts and crafts in a preschool program for the MR is described as a means of aiding growth and development. Knowledge of normal child development is essential in aiding the retarded child to cope with his own problems. The retarded preschooler may be unable to play cooperatively with other children, but through selective reinforcement he can learn what is acceptable behavior and what is not. Activities are important since he is capable of quiet play. Art experiences can aid the child in achieving self-awareness, formulating new ideas, and expressing his feelings and emotions. Initially, the child's drawing is random or "scribbling" which, like babbling, is a primitive form of expression and represents the first "paper-pencil" experimentation with this medium. When a scribbling child is urged to express himself in an adult manner, he loses individual expression. This development cannot be rushed without disturbing the child's natural growth process. Art and craft materials should be presented in a sheltered setting that lends itself to self-involvement. By their nature, these activities provide experience in following directions in a task-oriented setting. The use of arts and crafts gives the child a constructive outlet for aggressive, hostile, or destructive impulses. As the child becomes more aware of self and objects, his drawings will acquire some symbolic representations. The art work of the preschool child should be judged on the basis of the new experiences it provides rather than the products. (No refs.) *B. Bradley.*

1938 SCHMIDT, ALFRED. *Craft Projects for Slow Learners.* New York, New York, John Day Company, 1968, 83 p. $4.50.

The use of craft projects in special education programs for slow learners aids in the development of good work habits, motor coordination, and feelings of self-confidence. The 30 craft projects described have been broken down into step-by-step procedures in order to facilitate their use with MRs. Suitable age level designations and lists of required materials are included for each project. Teachers can use the buddy system with crafts by pairing advanced slow learners with those needing extra help. In addition to improving class functioning, this system contributes to the development of friendship and cooperation among the students. This book should be of interest to special education teachers and to those seeking simplified ways to use crafts with MRs. (No refs.) - *J. K. Wyatt.*

CONTENTS: General Information; Daily Scheduling; Motivation, Direction, Correlation; Setting Up the Room; What Each Age Level Can Do; Crafts Geared for the Retarded; A Suggested List of Basic Materials and Supplies; Thirty Illustrated Step-by-Step Craft Projects for the Mentally Retarded.

1939 CARROLL, HERBERT L. Work study program--A positive approach for slow learners. *Digest of the Mentally Retarded,* 4(1):13-17, 1967.

The work-study program of the Dayton, Ohio public school system, which consists of 96 units and 1,800 students, is reviewed. Noted gains from the program include attitude changes of the school administration, decreased student-employee turnover, permanent employment for students, and parental appreciation and support stemming from the discovery that MRs can become successful employees. The work-study program is under the direction of the job coordinator, who is responsible for all operation procedure and who maintains communication among student, employer, and school in a continuous, cooperative working relationship. If a work experience program is to be successful within a public school framework, it must remain flexible. Problems that may arise after the program is set up include: (1) scheduling students who are working, (2) checking attendance, (3) granting regular or special diplomas to trainees, and (4) choosing the type of grading to be used. Significant trends emerging in today's work-study programs are: (1) requiring additional years of high school for job training, (2) employing more school psychologists to fill the needs arising from the growth of these programs, (3) providing teacher-counselors with the additional guidance training they will need, (4) encouraging closer cooperation between welfare- and teacher-counselors to gain a more equitable arrangement of funds, (5) expanding community agencies to serve those who are not

able to benefit from school work experiences, and (6) consolidating city-county work experience programs so that over-solicitation and over-saturation of jobs will be eased. These trends will further serve to enhance and promote the realistic approach of work-study programs. (No refs.) *J. Melton.*

Department of Special Education
Dayton, Ohio

1940 FUDELL, STANLEY E., & PECK, JOHN R. *How to Hold Your Job.* New York, New York, John Day, 1967, 249 p. $6.95. (Student Workbook, 128 p.)

A curriculum for retarded adolescents with second-grade reading ability is outlined in a teacher's manual and implemented in an accompanying pupil workbook. The year's curriculum is divided into 12 units, each taking approximately 3 weeks to cover. These units are designed to shape the thinking and behavior of MRs so that they will develop the values and attitudes which are basic and necessary if one is to be a successful employee. Specific trade information is avoided. Instead the curriculum is designed to help these adolescents prepare for a job and develop positive attitudes towards employment. (No refs.) - *C. A. Pepper.*

CONTENTS: Why Should You Learn About Jobs? Getting Along With Fellow Workers; Are You Willing to Work and Do Your Best? Following Directions and Finishing Your Work; Being on Time; Are You Reliable? Can We Depend on You? Honesty Is Still the Best; How to Get a Raise in Salary; Fifty Ways to Lose Your Job; Cooperation Is the Basis of Success; Your Attitude Means Sucess or Failure; Going to Your First Job Interview.

1941 EGG, MARIA. *Educating the Child Who Is Different.* New York, New York, John Day Company, 1968, 192 p. $4.50.

In order to assure the fullest development of the capacities of MR children, parents and teachers need to work together as a coeducational team. Teachers can take an objective view of the needs and potential of an MR child and can help parents set goals that will best suit the child's capabilities. Parents must find care and educational settings that will foster the best development of their child. They will need to choose between residential and day schools and between the various types of educational opportunities offered by different schools. Decisions about education should be based on the nature of the child, the family situation, and local conditions. The education of MRs should center around training in practical abilities and direct preparation for life. Basic preparation for instruction should include learning to use existing abilities, follow directions, remember and work toward a specific goals, and training in endurance and concentration. Teaching methods, regardless of subject matter, should concentrate on breaking material into its proper components and allowing sufficient practice on each part. Parents and teachers involved in making decisions about what and how to teach MR children will find this book useful. (No refs.) - *J. K. Wyatt.*

CONTENTS: The Retarded Child and His Family; How Can We Help the Parents? Coeducators; The Children; Residential or Day School; To Educate or To Train? How Do We Teach the Child? What Should the Child Learn? Play; Music and Rhythm; Drawing and Painting; The Manual Arts; Should We Teach Academic Skills? Number Concepts and Calculating; Reading; Writing; Environment; Religious Education; What Comes Afterward?

1942 MARTINSON, MELTON C. IMC network report. *Children,* 34(4):293-297, 1967.

Special education programs for trainable children should utilize materials and techniques specifically developed for the education and behavioral needs of these youngsters. Progress is hindered by disagreement as to the basic goals of such a program, lack of suitable facilities, and a shortage of qualified teachers trained to understand and cope with problems of the retarded. There is a considerable body of literature available on the development of materials, methodologies, behavior analysis, language and psycholinguistics, motor training, and perceptual and other specialized training. Regional Special Education Instructional Materials Centers are a good reference source for available information. (18 refs.) - *E. F. MacGregor.*

School of Education
University of Oregon
Eugene, Oregon

1943 STUCKLESS, E. ROSS, & BURROWS, NONA L. Teaching methods with the mentally retarded deaf student. Paper presented at the 91st annual meeting of the American Association on Mental Deficiency, Denver, Colorado, May 15-20, 1967, 26 p. Mimeographed.

Teaching methods applied to the MR deaf child are discussed in terms of diagnosis, classification, therapy, and curriculum. Teaching methods are based on the following group classifications: (1) borderline MR with moderate hearing losses, (2) borderline to mild MR with moderate to profound hearing losses, and (3) moderate to severe MR with moderate to profound losses. IQ and hearing loss are scaled so that the classification may change as hearing loss increases. With suitable teaching methods, Group 1 should reach the general achievement level of EMR children and can be taught in special classes for the EMR. Language development, speech correction, and aural habilitation should be emphasized in preschool years. Almost all the children in this group should benefit from a hearing aid. Since Group 2 is handicapped primarily in loss of hearing, the most appropriate educational program is a residential school for the deaf which will provide a special developmental curriculum focused on personal adequacy, social competence, and academic and vocational skills. The third group is comprised of TMRs who require specific social training as well as instruction in functional communication. Their training may depend heavily on the use of sign language. (No refs.) - *B. Bradley.*

No address

1944 VAN WITSON, BETTY. *Perceptual Training Activities Handbook.* New York, New York, Teachers College Press, Columbia University, 1967, 79 p. $1.75.

This handbook, which is directed to professional workers involved in programs for children with special learning problems, emphasizes systematically developed and empirically tested groups of perceptual training activities that can be modified for use in the classroom. The child's level of function is the starting point in promoting focus in perception, association, and action, and these activities form an integral part of a child-centered, teacher-directed developmental program. The activities are divided into functional aspects of various sensory modes: vision, hearing, touch, smell, taste, and kinesthesis. Instructions are included for all activities, and many of the games and activities are illustrated. An illustrated Appendix on paper folding activities is also provided. This handbook presents the basic instructions for teachers who need more practical suggestions on activities of this type, and selected items can be employed in all special education classrooms. Most of the suggestions have originated from teachers who have found them useful in their own programs. Some of the more difficult tasks involving gustatory and olfactory skills are listed, since these perceptions often are overlooked in teacher planning due to the problem of obtaining materials. The majority of tasks specified within this handbook seem suitable for a wide range of children and applicable to a broad range of learning problems. (53 refs.) *B. Bradley.*

CONTENTS: Behavior Problems; Teaching; Visual Training; Auditory Perception Skills; Tactile Perception Skills; Olfactory Perception Skills; Gustatory Perception Skills; Kinesthetic Perception Activities; Appendix: Paper Folding.

1945 BARSH, RAY H. *Achieving Perceptual-Motor Efficiency: A Space-Oriented Approach to Learning.* Seattle, Washington, Special Child Publications, 1967, 365 p. $10.00.

This treatment of a space-oriented approach to learning is the first in a 3-volume series concerned with achieving learning efficiency for the preschool, elementary, secondary, and special class child, especially the child with special problems in learning. A model for curriculum organization is presented for the teacher, therapist, clinician, and parent to be used in the classroom, clinic, or home. The aim is to achieve the highest possible perceptual-motor integration. Practical suggestions and experimental evidence are presented. Most of the volume is concerned with the theoretical formulations and the 10 basic constructs of movigenics--a theory that deals with the relationship between physical movement and cognitive proficiency. The 3 dimensions of movement efficiency are muscular strength, dynamic balance, and awareness (body, spatial, and temporal). The 6 percepto-cognitive modalities are involved in a complex hierarchy that is dynamic and variable, with the visual mode at the pinnacle of that hierarchy. The 4 components of man that allow the fullest degree of freedom to move are bilaterality,

flexibility, rhythm, and motor planning. Ten guidelines for curriculum planning are presented. (423 refs.) - *R. Froelich.*

CONTENTS: A Perspective on Education; Basic Constructs of Movigenics; The Concept of Space; Muscular Strength; Dynamic Balance; Body Awareness; Spatial Awareness; Temporal Awareness; The Percepto-Cognitive Modes; The Gustatory Mode; The Olfactory Mode; The Tactual Mode; The Kinesthetic Mode; The Auditory Mode; The Visual Mode; Degrees of Freedom-Bilaterality; Rhythm; Flexibility; Motor Planning; Defining a Curriculum.

1946 UNITED STATES. HEALTH, EDUCATION, AND WELFARE DEPARTMENT. *A Review of Selected Program Activities in the Education of the Deaf.* Washington, D. C., U. S. Government Printing Office, 1967, 18 p. (Price unknown).

Handicapped children benefiting under Public Law 89-313 (the amendment to Public Law 89-10, Title I of the Elementary and Secondary Education Act), which became effective on November 1, 1965, include the mentally retarded, hard of hearing, deaf, speech impaired, visually handicapped, seriously emotionally disturbed, crippled, and other health impaired children who require special education. The benefits provided for children in local school facilities by P. L. 89-10, are extended by P. L. 89-313 to include handicapped children in state supported or state operated schools, and federal allocations are now based on the average daily attendance of handicapped children in state operated or supported special schools. Federal assistance can also be obtained through the State Department of Education by individual agencies within the state. Educational funds provided by P. L. 89-313 are distributed on a non-school-district basis. These federal funds are intended to supplement state funds so that educational programs for the handicapped can be extended and improved. (4 refs.) - *J. K. Wyatt.*

1947 REID, NEIL. Education for living. *Mental Retardation (Canadian ARC),* 17(2):14-16, 1967.

Programs for MR children are most beneficial when they encourage involvement on the part of the children themselves. This becomes most evident when children are given opportunities to interact with the community, come to know it, and discover that they do have a place in it. MR children should not be subjected to programs that stifle individuality, ignore creativity, discourage independence in self-care, and stress differences rather than strengths. They need training, opportunity, and encouragement to acquire new skills. With these skills, independence, and self-direction, MR children will be able to adjust to the community. (No refs.) - *J. Melton.*

Harold Lawson Residence
Metropolitan Toronto Association
for Retarded Children
Toronto, Canada

1948 SNYDER, DONALD R. Giving the retarded a chance. *NEA Journal,* 56(6):24-25, 1967.

The Human Development Program of the West Springfield, Massachusetts, public school system is designed to help schools develop the interests and aptitudes of their EMR pupils. On-the-job training is stressed in combination with academic subjects, some of which are of occupational origin. The program is nongraded, requires a minimum of 4 years to complete, and offers individualized instruction in budgeting, social security, job application, and finance. Half of the students' time is allocated for laboratory sessions on food and health services, 2 areas in which TMRs can perform well and can expect to find employment. Domestic and personal care laboratories are also conducted to provide experience in unskilled and semi-skilled jobs in hotels, nursing homes, and hospitals. Laboratory training is followed by actual on-the-job experience. After completion of the work program, the vocational counselor aids the S in choosing the occupation he is best suited for. (No refs.) - *G. Trakas.*

Human Development Program
West Springfield, Massachusetts

1949 YOUNIE, WILLIAM J. *Instructional Approaches to Slow Learning.* New York, New York, Teachers College Press, Columbia University, 1967, 179 p. $1.95.

Although 20 percent of the children in kindergarten to grade 12 may be classified as slow learners, available data on the

characteristics of slow learners are extremely general and do not provide specific answers to teachers' questions. Present assessment procedures are crude, yet they are often used to make final decisions about a child. As a result, children frequently are erroneously diagnosed as slow learners and/or placed in programs which do not meet their needs. Schools usually employ a functional definition of slow learner to classify children; they therefore place all low achievers in one group. This method does not allow for differential etiology or for differential treatment methods. Ideal administrative provisions for slow learners are based on flexible methods designed to meet individual needs. Three curriculum approaches usually used in an overlapping fashion with slow learners are the slow-track approach, the life-centered approach, and the vocational approach. The effectiveness of any one of these approaches depends on the imagination of the teacher and on the use of pupil grouping procedures that group students with common learning difficulties. Innovative approaches which have shown varying degrees of promise with slow learners are non-graded programs, programed learning, school-work-study programs, and team teaching. Innovations from special education which have been used successfully with slow learners include auditory input training, compressed and expanded speech, and perceptual development. School administrators, special educators, school psychologists, and all those involved in planning programs for slow learners will find this book of interest. (255-item bibliog.) - *J. K. Wyatt.*

CONTENTS: Slow Learning and Slow Learners; Characterization; Evaluation; Administration; Curriculum; Subject Matter Adaptations; Educational Innovation and Slow Learning.

1950 MALLISON, RUTH. *Education As Therapy: Suggestions for Work with Neurologically Impaired Children.* Seattle, Washington, Special Child Publications, 1968, 166 p. $3.50.

Educational therapy programs can be used with neurologically impaired children to help them overcome dysfunctions and lead fuller lives within their families and their communities. In order to plan a therapy program, an educational evaluation consisting of an extensive parent interview and a qualitative assessment of the child's abilities is used to provide information concerning present ability, dysfunction, and personality. The resulting program is tailored to the special needs of the individual child and centers around training, academic functioning, social behavior, and emotional development. It consists of both a home and a school program based on a stimulus-organized environment in which processes are separated into steps, each of which is presented individually and continued until mastered. Educational therapy is not a substitute for special schooling, nor will it compensate for a lack of adequate training and recreational experiences. The age and the innate potential of the child are factors which inevitably limit the results of educational therapy. This condensation of the 1964-1965 seminars on "Educational Therapy for Neurologically Impaired Children" should be of interest to special education teachers, speech therapists, school psychologists, and social workers. (47-item selected reading list) - *J. K. Wyatt.*

CONTENTS: Educational Evaluation; What Are the Things to Remember When We Start a Program? How and When Do We Introduce "Academic" Work? What Is the Role of Play in Educational Therapy? How Can Work Be Organized to Make It Carry Over From the Educational Therapy Session to the Rest of the Child's Life? What Are Some Implications of Educational Therapy with the Older Child? What Can Be Done to Adapt Work to Help the Child Get Along with His Siblings? When Do Parents Take Part in the Educational Therapy Session? How Can Letter Writing Be Used as Part of Educational Therapy? How Can Educational Therapy Be Terminated? What is Educational Therapy?

1951 BAUMGARTNER, BERNICE B. The role of the teacher in the development and implementation of curriculum (symposium). *Forum,* 4(1):4-7, 1967.

Teachers and administrators should have an honest conviction that each individual has unknown and perhaps unlimited potential, the development of which is highly dependent upon the teacher's competencies and that given the appropriate environment he is inherently motivated to lead a constructive life. Knowledge of growth and development is essential to careful planning in step-by-step sequential learning which emerges from

the child's own built-in sequences and split-growth patterns. In order to reach the atypical child the teacher should learn to see him with his own unique design for growth and should help him and his parents look for and find those emerging successful behaviors from which to build. Children should be guided into more and more successful activities by development of guidelines which are structured and yet flexible. Special materials should be prepared to meet every need. Day-to-day observations should be recorded and summarized. (4 refs.) *C. M. N. Mehrotra.*

No address

1952 BLESSING, KENNETH R. Use of teacher aides in special education: A review and possible applications. *Exceptional Children*, 34(2):107-113, 1967.

The present shortage of qualified special education teachers is discussed in terms of: (1) special educators' experiences with the teacher aide in the classroom, (2) the need for further exploration of the functions of the aide, (3) roles that the aide may play in assisting the teacher, and (4) utilization of aides who have classroom experiences with EMRs. Depending upon their individual qualifications, experience, and special competencies, the aides may serve as assistant teachers, instructional aides, classroom organizers, playground supervisors, clerical aides, or lunchroom supervisors. Forthcoming evaluation of teacher aides and their effect on learning will help determine the cost and class size of primary and intermediate EMR classes so that better use of qualified teachers may be possible. (8 refs.) - *J. Melton.*

Bureau for Handicapped Children
State Department of Public Instruction
Madison, Wisconsin

1953 AFFLECK, JAMES Q., LOWENBRAUN, SHELIA, & SHIRREFFS, JEAN M. Programmed training of sub-professionals to supplement instruction in preschool programs for children with cerebral palsy. *Cerebral Palsy Journal*, 28(4):3-5, 1967.

A remedy for the existing shortage of qualified special education personnel in the area of cerebral palsy (CP), was sought through programed training of sub-professionals to aid preschool programs for CPs. A 6-month pilot study used the works of Barsch and those of Kephart for the criteria activities. The sub-professionals could teach these perceptuomotor skill activities to non-ambulatory Ss in observable sequential steps. Programed materials consisted of 10 sets containing written instructions and an 8 mm. film to reinforce the sequential written instructions. Complete mastery of the materials by at least 90 percent of the 10 volunteers was considered effective if executed within 30 minutes. A second sample consisting of 10 teenage Ss was selected to perform the same tasks, and success again was achieved within the 30-minute interval. Statistical data indicate that autotutorial training of sub-professionals to work with CP children on a tutorial basis is feasible. (6 refs.) *G. Trakas.*

No address

1954 McCLINTOCK, EUGENE. Illinois Class I Junior Colleges and paraprofessional programs as part of occupational education. In: Scheerenberger, R. C., ed. *Training the Severely and Profoundly Mentally Retarded.* (*Mental Retardation in Illinois*, Monograph Supplement #3.) Springfield, Illinois, Department of Mental Health, 1967, 115-120.

The role of public junior colleges in the State of Illinois is summarized with additional information on a paraprofessional program for those concerned with the care of MR children. Until 1931, junior colleges increased in Illinois despite the lack of legal sanction. After World War II the concept of the community college expanded to include vocational training, evening classes, and adult education services. In 1951, the junior college was established as part of the common school system, but state aid was not provided until 1955. Over the years the Illinois legislature has taken other action to further the community college, but the primary emphasis occurred during the period from 1963-1965. The Public Junior College Act of 1965 stipulated requirements for the establishment, operation, maintenance, and funding of public junior colleges. Class I Junior Colleges in Illinois are required to provide: (1) courses in liberal arts, sciences, and general education, (2) adult education courses, and (3) at least 15 percent of vocational or technical courses. The Junior College districts

shall admit all qualified students (high school graduates) as long as space is available. This service meets local community demands, is locally controlled, and offers a flexible program. Each junior college is related to the particular geographic-economic-social structure of its community. An example is given of a paraprofessional program offered by Kaskaskia College as part of occupational education. During the first semester, programs in health and related occupations were developed to enable persons to qualify for jobs at the Warren G. Murray Children's Center. (No refs.) - *B. Bradley.*

Vocational Habilitation--Rehabilitation

1955 GEORGIA. VOCATIONAL REHABILITATION OFFICE. *Vocational Rehabilitation for Mentally Retarded Pupil-Clients.* Final report of project RD-836. Atlanta, Georgia, 1966, 177 p.

A 5-year project carried on from July 1961 through June 1965 to assist public schools in meeting some of the major rehabilitation needs of the MR brought about interagency cooperation in providing services and coordination of such community resources as public schools, special education, community services, and state vocational rehabilitation services. The background, purposes, objectives, and criteria for school selection are delineated. Project services included evaluation, curriculum adjustment, work experience, casework, counseling, placement, and follow-up of students enrolled in this project. The age, intelligence, and sex of pupils entering the program are discussed as they relate to the prevocational and vocational services and to subsequent employment. Statistical analysis of questionnaires and project reports showed that 80 percent of the respondents felt that the project had merit in fulfilling the needs of the EMR. Statistical analysis of questionnaires and project reports showed that 80 percent of the respondents felt that the project had merit in fulfilling the needs of the EMR. Continuance of the project is recommended with inclusion of work laboratories in schools where the need exists. Prevocational centers should be geographically placed to serve EMR needs. (41-item bibliog.) *G. Trakas.*

CONTENTS: Introduction; Plan of Operation; Meeting the Rehabilitation Needs of the Mentally Retarded; Curriculum Development; Evaluation, Counseling, and Placement; Pupil-Clients; Statistical Analysis of Data; Overview; Related Studies.

1956 U. S. CIVIL SERVICE COMMISSION. *A Second Look: A Progress Report on Federal Employment of the Mentally Retarded.* Washington, D. C., Superintendent of Documents, U. S. Government Printing Office, 1967, 16 p.

From December 31, 1964 to June 1, 1967, the number of MRs employed by the federal government increased from 361 to 3,241 and the list of job classifications filled by MRs increased from 40 to 64. Although most job appointments were to lower level, routine occupations, 93 percent of the placements were successful. As of June 1967, 75 percent of these were in the field and 25 percent were in the District of Columbia metropolitan area. States employing the largest numbers of MRs in federal positions at that time were California, Illinois, Missouri, New York, and Texas. Continuing problems that need to be solved if MRs are to be fully utilized by the federal government include: (1) barriers caused by executive and employee misconceptions about MR, (2) the negative attitudes of security officials, which prevents the employing of MRs in some agencies, (3) a lack of continuing interest in the program by some agencies, (4) a lack of qualified MRs in some geographic areas, and (5) the continuing need for highly individualized placement services. Procedures used by the federal government to provide employment have served as models for state and private employment practices. (No refs.) - *J. K. Wyatt.*

1957 GALAZAN, MICHAEL M. Vocational rehabilitation and mental retardation. In: Philips, Irving, ed. *Prevention and Treatment of Mental Retardation.* New York, New York, Basic Books, 1966, Chapter 18, p. 294-307.

The successful vocational rehabilitation of MRs depends on (1) the diagnosing physician's knowledge, beliefs, and attitudes toward MR and vocational rehabilitation; (2) the preparation for independent living provided by parents and teachers; (3) prevocational and vocational training; (4) a good job placement program; and (5) an adequate job maintenance program. Parents should avoid early overprotection and should support the retarded person's efforts to develop independence. Training programs should provide special learning opportunities and should foster the development of a value system that makes the MR person want to work. Programs should stress the achievement of good social adjustment so that MRs will be able to develop warm interpersonal relationships in the community. Community education should emphasize the understanding of MR so that MRs will find opportunities to utilize their skills, and so that their segregation and isolation will end. Sheltered workshops continue to be the best way to serve the employment needs of SMRs and to provide feelings of self-worth in and contribution to the community. (10 refs.) - *J. K. Wyatt.*

1958 SAENGER, GERHART. Social and occupational adjustment of the mentally retarded. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development.* New York, New York, Grune & Stratton, 1967, Chapter 31, p. 564-579.

A survey of available evidence on the occupational and social status of MRs in America reveals that the majority of EMRs are married and gainfully employed and that marriage is rare and employment possible but unusual for TMRs. Further analysis reveals that most of the employed TMRs demonstrated a gain of more than 5 points in IQ in an adult retest situation and that the majority of the unemployed TMRs scored more than 5 IQ points lower on the retest than they had during their school years. Specific factors which have been found to exercise a differential effect on adjustment include secondary physical handicaps, personality factors, attitudes toward the MR, the availability of services, the technological development of the geographic area, and the economic situation. In order to evaluate the MR's social and occupational adjustment with any degree of validity, longitudinal and cross-sectional research investigations are needed which are well-defined and well-controlled and which include a sampling of all MRs rather than a concentration of atypical groups. (18 refs.) - *J. K. Wyatt.*

1959 DIAL, KENNETH B. A report of group work to increase social skills of females in a vocational rehabilitation program. *Mental Retardation* (AAMD), 6(3):11-14, 1968.

Inability to handle themselves in boy-girl relationships has threatened the chances of some females to be vocationally rehabilitated. Sex education and opportunities to discuss their problems and express themselves seemed necessary. Therefore, social adjustment classes, which focused on sex education, and therapy groups, which furnished an environment in which self-expression could take place, were organized. These groups have been in operation for the past 5 years. Findings seem to indicate that the project was helpful to the girls. (No refs.) - *Edited journal abstract.*

Austin State School
Austin, Texas

1960 GOTTWALD, HENRY. Factors affecting collaboration between school and vocational rehabilitation programs for the mentally retarded. *Mental Retardation (AAMD),* 5(2):20-22, 1967.

Although the 2 fields do have common goals, little empirical information is available regarding mutual cooperation between special education and vocational rehabilitation (VR). However, a study was conducted by the state of Michigan to assess and analyze collaboration between MR secondary school programs and the Division of Vocational Rehabilitation (DVR). Data were gathered via questionnaires and interviews with superintendents of districts offering secondary MR programs, with MR teachers in the districts, and with VR counselors. Only 30 percent of the reporting districts had had referrals to DVR in the past year. Small

districts and younger programs for MRs tended not to use DVR services proportionately (P=.01), and teachers' professional training affected the rate of DVR referral (P=.05). Over 50 percent of the MR teachers needed more information about DVR services. A third of the VR counselors lacked adequate information about MR and MR programs. An interdisciplinary relationship proved to be significant in client successes. On the basis of this study it seems evident that professional training should include information about other programs and that the DVR and special education programs should exchange information and expand their efforts to provide comprehensive MR programing. (11 refs.) - *R. D. Perkins.*

Department of Special Education
Eastern Michigan University
Ypsilanti, Michigan

1961 HICKMAN, LEON H. JR. A foundation for the preparation of the educable child for the world of work. *Training School Bulletin,* 64(1):39-44, 1967.

The philosophy of a vocational program for EMR children at the Bridgeton Senior High School in Bridgeton, New Jersey, is described in terms of the pupils' skills in interpersonal relationships. The program at Bridgeton includes instruction on practical vocational requirements, job characteristics, and proper job attitudes. Driver training is also available to those pupils who are capable of receiving it. The EMR is assisted in self-evaluation of vocational goals supplemented by role-playing, industrial tours, and visits to community agencies. Due to reading problems, much of the work is presented through the use of visual aids. The most important requirement in work preparation programs seems to involve good interpersonal relationships. The curriculum should therefore be aimed at imparting both vocational and social competency. Counseling should be an integral portion of this program, and both formal and informal sessions may be utilized. All persons engaged in the education of the MR should have some degree of counseling responsibility. Much of the counseling will be of the preventive type, and the counselor may be most helpful in assisting the teacher in cases where emotional and personal adjustments are necessary before the pupil is ready to go out on the job. In addition to preparing students for community employment, the benefits of a work-school program are: (1) it provides an opportunity for evaluation of an individual's vocational skills, (2) it furnishes the student with experiences in new areas of work, and (3) it enables the student to gain self-confidence. (11 refs.) *B. Bradley.*

American Institute for
Mental Studies
Vineland Training School
Vineland, New Jersey

1962 KIDD, JOHN W., CROSS, THOMAS J., & HIGGINBOTHAM, JERRY L. The world of work for the educable mentally retarded. *Exceptional Children,* 33(9):648-649, 1967.

A 1966 follow-up study of 266 graduates (CA, 17-20 yr) of the St. Louis County (Missouri) Special School District found 169 successfully employed. Of these, 48 earned more than $1.50 per hour. IQs ranged from 44-99, but this was not found to be relevant to job holding. Jobs included a range of titles found in *Guides To Jobs for the MR* (Peterson and Jones, 1964) and some more skilled jobs such as photo finisher and key punch operator. The EMRs receive help from vocational rehabilitation as well as from 2 placement consultants at the school. A work experience center is maintained by the Special School District and the Vocational Rehabilitation Administration. (1 ref.) - *G. Trakas.*

Special School District of
St. Louis County
St. Louis, Missouri

1963 OHIO. PLANNING AND GRANTS BUREAU. A working future. *MR Highlighter,* 1(3):1, 1967.

Programing for the educable and trainable MR in Ohio combines academic with work skill routines. Working time for the EMR is increased gradually until the final year, which is devoted primarily to "on-the-job" training. Standards are maintained by the Division of Special Education. While work skills and social adjustments are emphasized for the TMR, academic training is given to the limit of their individual abilities. (No refs.) - *E. F. MacGregor.*

Room 1104
65 South Front Street
Columbus, Ohio 43215

1964 YOUNIE, WILLIAM J. The habilitation of the mentally retarded. In: Goldberg, I. Ignacy. *Selected Bibliography of Special Education*. New York, New York, Columbia University, 1967, p. 93-114.

Compiled to aid in training teachers of exceptional children in the area of vocational rehabilitation, the bibliography includes items primarily selected from the published literature of the years 1955 to 1966. (316-item bibliog.) - *A. Clevenger.*

1965 FLANDERS, B. Independence for the dependent. *Forward Trends*, 2(2): 86-88, 1967.

The MR's degree of dependence is not directly related to his level of intelligence, and education's aims should not be totally influenced by what the IQ score indicates he can achieve. In order to help the MR become as independent as possible, training programs should be realistic and effective in terms of the social climate. Training areas can be separated into personal abilities, work, and leisure-time activities, all of which should be designed to promote social acceptability for the MR. Personal habit training is often too protective in nature; more independence should be encouraged. In work training, less emphasis should be placed on the traditional academic curriculum and more on self-help skills. Adult training centers should provide practical work-training in preparation for the MR's employment. Although leisure training in crafts can stimulate the MR to develop a hobby, he often lacks the perseverance required to follow through, consequently leisure training should also direct him toward development of interests in participation sports such as bowling or ice skating. (No refs.) - *D. Jones.*

College of Commerce
Leeds, England

1966 LINDE, THOMAS F. The automated workshop and cerebral palsy. *Cerebral Palsy Journal*, 28(4):10-11, 1967.

Workshops for the cerebral palsied must keep pace through automation if they are to dispel the negative notion that they are primarily social rather than vocational in nature. To accomplish this, new techniques in the operation of machines and tools are needed to keep pace with present rates of economic productivity. The machine, used properly, can provide a path toward workshop stability. With creative help continuity of output can replace spasmodic outlay. Workshops must augment their services and strengthen their relationship with the business community. By becoming a more integral part of the community, the sheltered workshop would project a better image and would contribute directly to building a strong self-concept for the cerebral palsied. The task of automating the workshop calls for concentrated and imaginative planning. (8 refs.) - *G. Trakas.*

No address

1967 ROSENBERG, CHARLOT. Simple self-help devices to make for the handicapped. *Journal of Rehabilitation in Asia*, 8(4): 31-32, 1967.

Descriptions and illustrations are provided for construction of a knot tier and bottle filler designed for those having only slight use of one hand. (No refs.) - *J. Snodgrass.*

Cerebral Palsy Center
Atlanta, Georgia

1968 NEVADA. HEALTH, WELFARE & REHABILITATION DEPARTMENT. *Occupational Training Centers for the Severely Disabled in Nevada*. Linde, Thomas F., & McMillan, Robert. Carson City, Nevada, 1967, 65 p.

The Vocational Adjustment Centers in Reno and Las Vegas, Nevada, are demonstration projects which provide vocational evaluation and workshop-oriented training for severely disabled persons. Included in the diverse number of disability groups served by the Centers are persons who are emotionally disturbed, MR, physically handicapped, culturally deprived, or public offenders. Workshop activity is provided by subcontracts obtained from community businessmen. This approach allows for the manipulation

of tasks to meet the widely varying needs and abilities of the workers. Factors to be considered in the vocational evaluation of MRs include level of concrete and abstract thinking, ability to learn and remember work task procedures, and possible deficiencies in perceptual-motor coordination. MR training situations ought to provide both a variety of tasks and techniques useful in measuring and overcoming problems and work methods which can be adjusted to circumvent problems. (115-item bibliog.) - *J. K. Wyatt*

1969 GLASER, WILLIAM A. *Sheltered Employment of the Disabled: An International Survey.* Geneva, Switzerland, International Labour Office, 1967, 94 p. (Price unknown).

An international survey of the practices and problems of sheltered employment facilities for the disabled--including data on 2,800 workshops employing 180,000 persons in 37 countries--reveals that in most countries: (1) sheltered workshops function to provide permanent employment for disabled persons who cannot be employed privately; (2) the majority of the workshops are owned and administered by private, voluntary groups; (3) public workshops are administered separately from other public establishments for the disabled; (4) operating subsidies principally supplied by national and local governments are needed; (5) a fraction of workshop output is labeled and labeling per se is opposed; and (6) some type of reduced-rate pension continuation for workshop employees is favored. Although the basic ideas concerning sheltered workshops are similar, definitions of "sheltered workshop," eligible personnel, average size, composition, goals, medicosocial functions, management practices, labor conditions, scheduling, and output vary, in some cases widely, between countries. The more developed programs are generally found in countries with higher national incomes and larger numbers of war casualties. Sheltered employment includes both men and women in all countries and children in a few countries. Regular medical examinations are common, and several countries provide medical and social services and make examination and treatment services available either at the workshop or at another agency. Provisions for occupational therapy, physiotherapy, vocational testing and vocational guidance are found in a very small number of countries. (28 refs.) - *J. K. Wyatt.*

1970 RUSALEM, HERBERT, PETERSON, NEALE, & McCRANEY, HARRIETT. The role of the state rehabilitation counselor in institutional programming. *Mental Retardation (AAMD),* 5(2):15-19, 1967.

Since the state vocational rehabilitation (VR) counselor prepares institutionalized MRs for work in the community, it is essential that he maintain a reality-oriented program which upholds the standards of that community. MRs are often institutionalized because of inability to cope with the environment; however, successful performance in the institution cannot be equated with readiness for discharge because intra-institution work norms do not always equal community norms. Too often the institutional instructor-practitioner has little instructional training. His primary concern is with production, not with the training of MRs. The institutions which fail to mirror work realities will have a greater number of employment failures. Because vocational programs become obsolete without current information, the VR counselor must seek feedback information for program evaluation. With regard to institution policy on discharging MRs, the VR counselor must insist that realistic readiness standards be set and kept. The VR counselor must know the community, cultivate its attitudes, and use its resources to help MRs. (No refs.) - *R. D. Perkins.*

Hunter College
New York, New York

Recreation

1971 BIRENBAUM, ARNOLD, & SCHWARTZ, ARTHUR L. *Recreation for the Mentally Retarded: A Community Based Program.* New York, New York, Association for the Help of Retarded Children, 1966, 96 p. $2.25.

A federal grant has allowed over 500 MRs of all ages in New York City to take part in the varied community recreation program of the Group Work Recreation and Camping Department of the Association for the Help of

Retarded Children (AHRC). Aims of the 13 participating community centers in this 3-year study include: initiation of group recreation and leisure time programs; investigation of the extent to which service agencies can meet the MR's psycho-social needs; determination of AHRC's role in establishing MR programs in service agencies; measurement of the results of the activities among normals and MRs; determination of the conditions under which selected EMRs can be included in activities with normals; and development and publication of training manuals on group methods and procedures for professional staffs in other areas. The project staff provided screening and consulting services and promoted professional interests. The EMR and TMR population came from socio-economic backgrounds ranging from unskilled to professional. Continuation of recreational events for MRs at community centers will depend upon the rapport between agencies and the financial support available. Some projected plans call for expansion of services within the present agencies as well as for the establishment of other centers. (No refs.) *G. Trakas.*

CONTENTS: Introduction: Community Recreation Resources for the Retarded in New York City; The Role of the Sponsoring Agency; The Population Served; Description of the Program; Participant Response; Innovating Programs at the Local Community Center; The Institutionalization of New Programs at the Local Community Center; Summary and Conclusion.

1972 CARLSON, BERNICE WELLS, & GINGLEND, DAVID R. *Recreation for Retarded Teenagers and Young Adults.* New York, New York, Abingdon Press, 1968, 316 p. $4.95.

Organized recreation programs for retarded teenagers and young adults should satisfy their basic needs for love, the sharing of interests, acceptance, encouragement, someone to listen, friendship, discipline, self-realization, and quiet and should stimulate growth by providing opportunities for involvement, interaction, and the development of mature behavior. Activities which redevelop lost skills, reinforce and broaden present skills, and allow for the acquisition of new skills should be provided. In order to enhance the development of both independent and cooperative functioning, MR recreation programs should place major emphasis on social development. MRs need opportunities to practice social behavior and skills; they should also be encouraged to develop at their own pace. Program directors must set up realistic standards of social behavior, avoid pushing for too much too soon, and understand the level of social development of each person participating in the program. In addition to promoting social development, recreation programs can promote mental health, increased physical ability, and intellectual growth. Experience with music, games, parties, sports, handicrafts, and hobbies can be provided by special programs, community programs, and home projects. The recreational methods and techniques presented in this book will be of interest to recreation leaders, teachers, parents, and volunteers seeking guidelines to use with MRs. (73-item bibliog.) - *J. K. Wyatt.*

CONTENTS: Understanding the Maturing Retardate and His Special Needs; An Organized Program; Group Activities; Special Interests; Family-Centered Activities.

1973 AMERICAN HEALTH, PHYSICAL EDUCATION AND RECREATION ASSOCIATION. *Physical Education and Recreation for Mentally Retarded Pupils in the Public Schools.* Digest of findings. Brace, David K., Washington, D. C., Spring 1966, 4 p.

Eighty-one representative samples are presented in a partial summary of the findings of the physical education (PE) and recreational (R) facilities provided for the MR in United States public schools. Data concern: type of schools; provision for class instruction; activities taught in PE and R; available facilities; equipment and supplies; R activity; competitive sports; tests and evaluation; and opinions on instruction. This information was published for administrators and teachers of MR. Of the 5,864 questionnaires sent to schools, only 1,589 were returned in suitable form to be utilized in this study. (No refs.) *G. Trakas.*

1974 HAUN, PAUL. Recreation in institutions for the retarded. *Mental Retardation, (AAMD),* 5(6):25-27, 39, 1967.

Recreation is viewed as a basic human need requiring no further warrant than the fact that we are human whatever our age, our class, our education, our health, or our intelligence. Recreational activities are

326-079 O - 68 - 10

defined as those electively chosen pursuits which give the participant enjoyment and which in themselves are not against the interest of society. Attention is directed to that group of retardates who, for whatever reason, will remain permanently institutionalized. A distinction is made between means and ends and it is pointed out that the same activity may be used recreationally or as a vehicle for instruction with educational purposes in mind. (No refs.) - *Journal abstract.*

No address

1975 PENNINGTON, WARD R., & BRAZEAL, EMILY, J. Partlow in Alabama emphasizing fitness. *ICRH Newsletter*, 2(8):1, 4, 1967.

A physical education program involving 1,500 MRs is now in its second year at Partlow State School (Alabama). Social awareness and etiquette have improved, sex problems have decreased, and emotional and academic improvements have resulted. SMRs and TMRs attend 1/2-hour classes, while EMRs have 1-hour sessions. The part-time instructors are graduate students in physical education. Activities include reaction drills, squat-thrusts, push-ups, sit-ups, climb-the-mountain, and bear-run for the men and more moderate exercises such as "touch-your-toes," stretch-and-bounce, and jumping-jack for the women. Football, basketball, and softball leagues have been organized for the boys. Sometimes the team sports are modified so that success can be obtained easily. The girls' program includes soccer, volleyball, bowling, softball, track and field, relays, and dancing. Despite current successes, new methods are being sought to improve the programs. (No refs.) - *R. D. Perkins.*

Partlow State School
and Hospital
Tuscaloosa, Alabama

1976 DROWATZKY, JOHN N. Lucas County Association for Mentally Retarded Children, Toledo, Ohio and the Joseph P. Kennedy, Jr. Foundation. Evaluation of a Residential Camp Program for Mentally Retarded Children. (Research Report) 1967, 30 p. Mimeographed. Copies available from author.

An investigation of counselor efficiency, counselor acceptance of children, the effects of a physical fitness program, and children's acceptance of camp activities at Camp Courage--a residential camp for TMRs aged 8 to 48 in Toledo, Ohio--demonstrated that these aspects of an MR camping situation can be evaluated. Counselors were given the California F scale prior to the start of camp and were given post-camp efficiency ratings by the camp director. The Cowell Behavioral Trend Indices were used by counselors to rate each child at the beginning and at the end of the camping period. A moderate, but not statistically significant, relationship was found between the F scale scores and the efficiency ratings of counselors. There was a consistent, but not a statistically significant, trend for counselors to rate older campers lower than younger campers. No significant relationship was found between F scale scores and camper ratings. The California F scale did not prove to be a satisfactory counselor-selection instrument. The physical fitness test for MRs developed by Hayden and the Kraus-Weber minimum muscular fitness test were used to evaluate physical fitness. Since both tests call for previous training and both require a long time for administration, neither test proved to be adequate for the assessment of the physical fitness of MRs. Large numbers of MRs failed to pass minimum muscular strength tests. Participation in the camp program did improve the physical fitness of some of the children. (13-item bibliog.) - *J. K. Wyatt.*

Division of Health and
Physical Education
University of Toledo
Toledo, Ohio 43600

Residential Services

1977 WOLFENSBERGER, WOLF. Research policies and problems in residential institutions. *Mental Retardation (AAMD)*, 5(5):12-16, 1967.

State institutions for the retarded usually lack clearly defined policies governing the conduct of research. This is due to the fact that laws and conditions often vary

from state to state. Each institution should have a written document specifying its orientation, policies, and rules. After these concepts and attitudes have been defined, 1 person should be appointed to serve as research coordinator. A staff member who desires to do research should discuss his ideas with his department head and then with the research coordinator. A written research proposal should then be submitted. Ethics in research should center around an analysis of types of research, levels of risk, and types of subject consent. Independent research should follow the same rules as institution-sponsored research. A major problem in research on the institutional level is that its results may not be incorporated into the institutional program. This is due to the rigid, self-perpetuating setting of the institution. (6 refs.) - *J. Melton.*

University of Nebraska
College of Medicine
Omaha, Nebraska

1978 BRAMWELL, DONALD M. Changing concepts of residential care. In: Philips, Irving, ed. *Prevention and Treatment of Mental Retardation.* New York, New York, Basic Books, 1966, Chapter 20, p. 334-345.

Although the majority of MRs have always resided in the community, it has only been in the last 20 years that the belief that institutional care is preferable has given way to a generally accepted assumption that MRs should be members of the community, and that the numbers and variety of community residential care facilities should therefore be expanded to provide for their social, emotional, and economic needs. Some major changes in community care programs have been: the expansion of residential facilities including foster homes, nursing homes, day care centers, nursery schools, private schools and institutions, and sheltered workshops; an increase in the number of MR children for whom special education is provided; the establishment of traveling clinics which provide diagnosis, evaluation, counseling and guidance services for MRs in remote areas; and the provision of direct subsidies to parents, homemaker services, foster-home care, or care in private institutions or nursing homes by local, state, and federal governments. Traditional state institutions are moving away from their school, home, or colony function and toward a hospital function which would provide intensive, specialized treatment and major training programs for therapeutic teams. Modern residential institutions should assist MRs to attain maximum social, emotional, and intellectual maturation in order to enable them to return to their own homes at the earliest possible time. Additional residential community facilities are urgently needed. At the present time most state institutions are overcrowded and unable to meet the minimum space standards of the American Association on Mental Deficiency. (11 refs.) - *J. K. Wyatt.*

1979 UNITED STATES, HEALTH, EDUCATION, AND WELFARE DEPARTMENT. *Quest for Equality.* Gula, Martin. (Children's Bureau Publication No. 441-1966.), Washington, D. C., Superintendent of Documents, U. S. Government Printing Office, 1966, 50 p. $.60.

The time required for an institution to move from segregation to desegregation will depend on the board consensus; the conviction and leadership of the administration; the support received from the sponsoring organization and the major financial contributors of the institution; the elimination of any legal obstructions to desegregation; the degree of segregation existing in the schools, churches, and neighborhood facilities of the community; the degree to which the institution is dependent on referrals from public and voluntary agencies which comply with civil rights requirements; and the degree to which the institution must purchase care arrangements from public or voluntary agencies that are discontinuing their affiliation with segregated institutions. Once the board has established a desegregation policy, the administrator will need to work with the staff, the parents, the children, and the community in order to help them make the adjustments necessary to facilitate desegregation. The process of desegregation at the Austin State School in Austin, Texas--a public state residential institution which provides diagnostic services, residential care, and vocational training for over 1,000 MR students under age 21--was carried out in such an uneventful manner that it was unnoticeable to the majority of the staff. Prior to the desegregation transfers, dormitories, dining rooms, kitchens, and recreation areas were segregated, both Negro and white staff were employed in either Negro or white dormitories, and some academic classrooms were desegregated. Integration processes began with administrator-attendant

discussions followed by student transfers. Grouping was based on a student's adaptive behavior level, age characteristics, and additional criteria. (16 refs.) - *J. K. Wyatt.*

CONTENTS: What Prompts Change? The Process of Change; Desegregation; How Long Does It Take? The First Step; Establishment of Board Policy; The Administrator's Role; Staff; Working with the Community; Parents; Children; Integration in a Residential Treatment Center for Emotionally Disturbed Children; Integration of a Children's Home; A Century of Racial Segregation Ends Quietly in a Children's Home; Moving into Integration at the Charlotte, North Carolina, Florence Crittenton Home; The Process of Desegregation at the Austin State School; Racial Integration of a Child Care Institution.

1980 KÖNIG, KARL. The planning of residential schools for exceptional children. In: Pietzner, Carlo, ed. *Aspects of Curative Education.* Aberdeen, Scotland, Aberdeen University Press, 1966, Chapter 12, p. 266-280.

Residential schools for exceptional children should contain separate living and school units in order to divide each day into 2 separate units and thus enable the child to experience the duality of home and the world. Living units should house a maximum of 20 to 25 children and should be designed as self-contained, home-like buildings which avoid a boarding-house or institution atmosphere. They should contain children's sleeping, living, community, and dining rooms, staff bedrooms, common room, office, and laundry room. The school should be more utilitarian than the home, and its architecture and educational goals should strengthen the children's ego-consciousness and give them a firm self-reliance and great moral strength. Classroom design should center around a large classroom to be used for main lessons with the provision of 1 or 2 smaller classrooms to be used when classes are divided for special instruction. Classroom space should be arranged to allow for an interplay between the room-space of the teacher and that of the pupils. Additional working space should be set apart for the use of the teacher alone. In early school years complementary colors may be used to differentiate between teacher and pupil spaces. (5 refs.) - *J. K. Wyatt.*

1981 PRIMROSE, D. A. A. Children in the mental deficiency hospitals of Glasgow and Argyll. *Developmental Medicine and Child Neurology,* 10(3):366-373, 1968.

A review is made of the children under the age of 15 years occupying mental deficiency beds for the population of Glasgow and Argyll, Scotland, at January 1, 1967. Of 269 children (1:1,000 population under age 15 years) 253 are severely subnormal and of these 60 percent are idiots. Thirty-three percent had epilepsy. The children mostly come from average homes and in 70 percent of cases their relatives continue to show an active interest in them. Thirty-two of the children were illegitimate and 58 had their admission to hospital accelerated for social reasons. The causes of the mental deficiency, where known, are detailed and compared with previous series. On comparison there is an increase in the incidence of those cases secondary to meningitis and encephalomyelitis and the number attributed to gastroenteritis with severe dehydration is commonly large. These increases may be due to a higher survival rate as the result of modern therapeutics. The cerebral palsy group is separately detailed to show any additional factors which might indicate those cases where the cerebral palsy and the mental deficiency are likely to have originated antenatally. The place of neonatal anoxia and low birthweight babies is discussed. More than 1/2 of the children appear to have had their severe subnormality determined antenatally. (11 refs.) - *Journal summary.*

Lennox Castle Hospital
Lennoxtown
Glasgow, Scotland

1982 HALLAS, CHARLES H. *The Care and Training of the Mentally Subnormal.* Third edition. Bristol, England, John Wright & Sons, 1967, 254 p. $8.75. (Williams & Wilkins, Baltimore, Maryland, exclusive U. S. agents.)

Since hospitals for MRs may provide educational training, shelter, special nursing care, control and/or preparation for future community care services, their nursing goals should be directed toward helping MRs live happy lives within the hospital; toward encouraging the growth of independent thinking and problem-solving abilities; and toward aiding the development of good habits

and attitudes, individual abilities, interests and aptitudes, favorable personality traits, work interest and proficiency, a code of ethics, a willingness to help others, powers of self-control, respect for the property of other persons, and the ability to accept responsibility. Hospital programs should be realistic, centered around positive action, and based on a belief that all MR, regardless of its severity, will yield to reconditioning. This third edition of *The Nursing of Mental Defectives* (1958), reflects the continuing changes in the field of MR during the last 10 years (1) by presenting new material on genetics, physiotherapy, specimen collection, nurses' notes, psychotherapy, counseling, chromatology, and case assignment; (2) by revising data on classification, epilepsy, and community care; and (3) by making necessary amendments to update other information. Although this book is intended for nurses, it should also be of interest to social workers, public health personnel, and medical students. (25-item bibliog.) - *J. K. Wyatt.*

CONTENTS: Introductory; Legal Aspects of Mental Subnormality; Classification of the Clinical Varieties of Mental Subnormality; Epilepsy and Hyperkinetic Behavior; The Admission of a Patient; Methods of Examination and Investigation of the Mentally Subnormal; Education of the Mentally Subnormal; Discipline, Special Privileges, and Staff-Patient Relationships; Occupational Therapy; Rehabilitation; Wards and Ward Management; Nursing Assignment; Community Care; Drugs and Their Indications; Mental Illness in Relation to Mental Subnormality; Methods of Treatment; Psychological Development; Patterns of Behavior; Intelligence and Intelligence Testing, Learning, Remembering, and Forgetting; Impressions; Personality; The Unconscious Mind; Emotions.

1983 CALIFORNIA. Mental Hygiene Department. *Hospitals for the Mentally Ill and for the Mentally Retarded:* Statistical Report for the Year Ending June 30, 1965. Sacramento, California, 1965, 108 p.

During 1965, the 6 hospitals for MRs which are maintained by the California Department of Mental Hygiene admitted 1,265 applicants and had a year-end preadmission waiting list of 1,932 persons. This represented an increase of 356 admissions and a decrease of 112 preadmission waiting-list applicants over the previous year. Ninety percent of those admitted were first admissions. The majority of these were between the ages of 5 and 9 years and 80 percent had IQs below 50. The diagnostic classifications used to explain the MR of the 1965 admissions were: infection, 9.6 percent; trauma or physical agent, 14.1 percent; unknown prenatal influence, 36.4 percent; unknown or uncertain cause with the structural reactions manifest, 13.4 percent; uncertain (or presumed psychologic) cause with the functional reaction alone manifest, 20.5 percent; other conditions or classifications, 5.8 percent. These classifications have remained fairly stable for the 1960-1965 period. The classification "unknown or uncertain cause with structural reactions manifest" represents a 6-percent increase over 1964, while the classification "uncertain cause with functional reaction alone manifest" represents a 6-percent decrease. Hospitals served 13,001 patients in 1965, 57.6 percent of whom were male. They were increased by 444 beds and were occupied 1.2 percent below capacity. Of the 260 patients discharged during the year, 35.7 percent were classified as "MR due to uncertain causes with the functional reaction alone manifest" and 21.6 percent were classified as "MR associated with diseases and conditions due to unknown prenatal influence." (No refs.) - *J. K. Wyatt.*

1984 SAVAGE, MALCOLM J., WELTMAN, RHONDA, & ZARFAS, D. E. Short-term care for the mentally retarded. *Mental Retardation (AAMD),* 5(2):9-14, 1967.

The Children's Psychiatric Research Institute (London, Ontario, Canada) was established in 1960 and functions in short-term services to MRs to reduce stress placed upon the family. There are now 96 beds in use and services include diagnosis, assessment, medical and psychiatric treatment, counseling, day-care, and educational and vocational guidance. Admissions are for additional diagnostic investigation, treatment, behavior observation, educational evaluation, research, or temporary relief which may introduce the family to institutional care while they await long-term care. From 1961-1963, 867 MRs were admitted; 38 percent were female and 62 percent were male. Of these, 50 percent stayed 1 month, 75 percent stayed under 2 months, and 25 percent were later admitted to other institutions for long-term care. Fifty percent were under 6 years of age, and 80 percent were under 12 years of age. Thirty-three percent were profoundly retarded, 25

percent were severely retarded, and 5 percent evidenced behavior disturbances. The males had the highest IQs. The effects on the families ranged from beneficial to traumatic. Three case histories reflect different admission situations and the family's adjustment. (10 refs.) - *G. Trakas.*

Children's Psychiatric
Research Institute
London, Ontario, Canada

1985 MERCER, MARGARET. Why mentally retarded persons come to a mental hospital. *Mental Retardation* (AAMD), 6(3):8-10, 1968.

Severely retarded patients in a mental hospital present problems in individual treatment and in ward management far greater than their actual number suggests. In the higher level retarded, the interaction of mental illness and MR manifests itself clearly as a problem of community mental health. Hostile, negativistic behavior was a major factor in the hospitalization of a representative sample of MRs under 40 years of age of Saint Elizabeths Hospital. Studies within the framework of frustration-aggression theory might be profitable. Better verbal and nonverbal methods of communication are necessary. Preventive psychiatry is needed to help the mentally retarded deal with the added pressures to which their intellectual limitations contribute. (3 refs.) - *Journal abstract.*

Behavioral and Clinical
Studies Research Center
St. Elizabeths Hospital
Washington, D. C.

1986 GOROFF, NORMAN N. Research and community placement--An exploratory approach. *Mental Retardation (AAMD)*, 5(4): 17-19, 1967.

An exploratory research study was conducted to learn why some MRs return to their respective institutions after only 2 years of community placement. The chief information sources were the community relator and the social worker who were directly associated with the MRs. The returnees ranged in age from 18-40 years. The research design utilized the critical incident technique along with questionnaires and interviews to gather information. Consequential and inconsequential categories were created to define the MRs' social behavior in the community with regard to morals, emotional stability, and working relationships. Reported incidences were rated as consequential or inconsequential. A consequential incident would be: "she stayed overnight with a young man in his hotel room." An inconsequential incident would be: "he used excessive amounts of soap and soap powder." Data received by the relator and the social worker showed that 1/2 of the MRs' community incidents were regarded as inconsequential by the social workers. This suggests that professionals and the lay community hold different views on the social and working behavior of the MR. (4 refs.) - *G. Trakas.*

School of Social Work
University of Connecticut
Storrs, Connecticut

1987 TARJAN, GEORGE, DINGMAN, HARVEY F., EYMAN, RICHARD K., & O'CONNOR, GAIL. Evaluation of management and therapy of the mentally retarded. In: Zubin, Joseph, & Jervis, George A., eds. *Psychopathology of Mental Development.* New York, New York, Grune & Stratton, 1967, Chapter 33, p. 603-622.

Evaluation studies of patient participation in therapy and management programs at Pacific State Hospital, Pomona, California, revealed that most eligible patients took part in therapy programs and that, although in the period from 1953-1965 the hospital population had changed to include an increasingly larger proportion of younger and SMR patients, the number of eligible candidates involved in management programs had not decreased. Handicaps significantly identified with exclusion from therapy programs were combinations of absence of speech and aggressive, withdrawn, or psychotic behavior. Analysis of trends in the utilization of the specific types of management programs provided by the hospital showed: (1) a decrease in the use of the originally small vocational placement program; (2) a gradual increase in participation in the family-care program until 1958, when a rapid increase began; and (3) a decrease in the use of the home-care program until 1963, when a sharp increase followed. (25 refs.) - *J. K. Wyatt.*

1988 FRIEDSAM, HIRAM J., & DICK, HARRY R. A note on the facilitation of early institutional adjustment of retarded children. *Mental Retardation* (AAMD), 6(3):15-17, 1968.

The effects of intimate personal contact of mentally retarded children with a foster grandparent during the first few weeks of institutionalization were investigated. Information on the emotional and physical behavior of children with and without grandparents was derived by structured interviews with houseparents. By various criteria, the children with foster grandparents were judged consistently to be better adjusted than those without foster grandparents, both during the first 2 or 3 days after admission and after the third week. (13 refs.) *Journal abstract.*

North Texas State University
Denton, Texas 76203

1989 RAHR, ANNABELLE. Resident trainee programs. Paper presented at the 91st annual meeting of the American Association on Mental Deficiency, Denver, Colorado, May 15-20, 1967, 7 p. Mimeographed.

A group of 40 mildly retarded female and male adults at the Seaside Regional Center share living quarters and take part in training for work assignments in housekeeping, food service, child care, maintenance, sewing, and laundry. The living situation is designed to help these young adults relate acceptably to the opposite sex; it is hoped that habits learned in this setting will be carried over to acceptable behavior within the community. The adults are paid $20.00 every 2 weeks, work 40 hours a week, and attend academic classes 2 1/2 hours weekly. Within the living unit, stress is placed on instilling responsibility for room care, consideration for one's roommate, and appreciation of property. When the adult receives his stipend, a member of the unit personnel discusses with him some of his material needs. Clothing is usually stressed. A trip is taken into the community and purchasing takes place. Effective ways of using transportation and communication are learned after the young adult has gained an appreciation for earned money. This program is successful because it provides those experiences in social awareness and emotional maturity which are necessary before the young adult can make a satisfactory adjustment from institutional to community living. (No refs.) - *J. Melton.*

Seaside Regional Center
Waterford, Connecticut 06385

1990 LENT, JAMES, LeBLANC, JUDITH, & SPRADLIN, JOSEPH. A demonstration program for intensive training of institutionalized mentally retarded girls. *Project News of the Parsons State Hospital and Training Center,* **3(2)**:1-18, 1967.

A program was designed to train MR girls in personal, social, educational, and occupational skills, to instruct personnel in the application of training techniques, and to encourage other institutions to use the techniques. One phase prepared girls, ages 15-21, for life outside an institution by making their behavior acceptable to a family or by making them capable of semi-independent adjustment. A second purpose was to improve institutional adjustment. Behaviors detrimental to adjustment were selected for elimination and low-frequency behavior required for adjustment was selected for increase. Girls were observed in 8 to 12 3-hour sessions to fix baseline levels of personal and social skills. An *a priori* checklist pertaining to the use and care of clothing, cleanliness, grooming, walking and sitting posture, and verbal and social behavior was used as a project guide and as a means of evaluating the overall program. A reinforcement system used downtown activities and money as back-up rewards and check marks on a personal card for generalized rewards. The general procedure was to work intensively with a small group until they were trained. A comparison of baseline with follow-up indicated improvement in care of clothing, cleanliness, grooming, walking, and sitting. Verbal and social behavior were not improved. In a second program designed for 28 TMRs 12-15 years of age, a chart of the specific relation of behavior to tokens is posted and back-up rewards include cottage and downtown activities. The educational program of reading, arithmetic, time-telling, and phonics has enabled a specially trained patient to become a useful aide-helper. (No refs.) - *R. D. Perkins.*

Parsons State Hospital and
Training Center
Parsons, Kansas

1991 KIMBRELL, DON L., LUCKEY, ROBERT E., BARBUTO, PAUL F. P., & LOVE, JOHN G. Operation dry pants: An intensive habit-training program for severely and profoundly retarded. *Mental Retardation, (AAMD)*, 5(2):32-36, 1967.

Behavior-shaping techniques were used to increase social maturation in 40 severely and profoundly MR institutionalized females, 5-18 years of age. Nine attendants used continuous training methods designed to enrich the environment with developmental toys, simplify the environment to meet the MRs' needs, schedule activities to suit individual requirements, promote meaningful activity, and utilize operant conditioning. A psychologist evaluated the Ss on the Vineland Social Maturity Scale (VSMS) before and after the 7 months of training. Mean gains of 6.78 months in social age and 5 social quotient points made by the experimental group were not statistically significant. However, laundry volume and "potty" records produced statistical evidence of significant improvement. Nine of 10 "t" values for social maturity scores on the VSMS were significant (0.05). Further data analysis may reveal determinants for Ss likely to benefit from methods used in this study. Evidence suggesting the beneficial effects of this training for young MR girls will be investigated in a follow-up study. Subjective evaluations indicated numerous improvements in the MRs and their ward life. (6 refs.) - *R. D. Perkins.*

Abilene State School
Abilene, Texas

1992 LITCHFIELD, ROBERT. Ralph finds a home. *Mental Retardation (Canadian ARC)*, 17(2):11-13, 1967.

Although recreation, occupation, and habilitation therapies are initiated and organized at the administrative level, the suggestions of staff personnel, who are in the best position to directly assess the needs and capabilities of the ward, merit consideration and may be put into practice. Adopting this philosophy, Tranquille School enacted 3 ward-inspired projects: planting a garden with the help of 83 severely retarded males, building a park near the school, and raising a steer for a spring barbecue. These staff-directed activities proved to be beneficial for both the students and the staff. (No refs.) - *J. Melton.*

Tranquille School
Tranquille, British Columbia
Canada

1993 WOLF, JAMES M. *The Blind Child with Concomitant Disabilities*. (Research Series No. 16.) New York, New York, American Foundation for the Blind, 1967, 112 p. $1.00.

Analyses of the populations of 48 residential schools for visually impaired children by their chief administrators revealed that when MR was defined as an IQ score 1 or more standard deviations below the mean on an individually administered, standardized intelligence test, 25 percent of their combined population of 6,696 children were MR. Sixty-seven percent of the schools conducted special education classes for MRs. The average child attending these classes had 3.18 identifiable disabilities. Special education classes lacked clearly defined educational objectives and curricula were primarily eclectic. There were more children with multiple disabilities than children with the specific combination of visual impairment and MR attending special education classes. Diagnostic emphases with visually impaired MR children should be directed toward distinguishing between reversible and irreversible MR conditions so that specific educational prescriptions can be designed for each child. When MR is the result of environmental deprivation, educational procedures should be directed toward reactivating developmental processes. When MR is irreversible, educational emphasis needs to be focused on its handicapping consequences. (115 refs.; 152-item bibliog.) - *J. K. Wyatt.*

CONTENTS: Introduction; Review of Related Research; Procedures; Results; Discussion; Summary and Implications.

1994 AMERICAN ASSOCIATION ON MENTAL DEFICIENCY. *Guidelines for Nursing Standards in Residential Centers for the Mentally Retarded*. Ad hoc Committee Report, Sub-committee on Nursing, 1968, 14 p.

In order to promote the optimal health, and the maximum self-care and independence of

MRs in a residential center, guidelines for nursing standards should be based on a process of continuous assessment and re-assessment of shifting resident needs. The nursing department should be responsible for: (1) nursing organization including the development of a general nursing program coordinated with the total interdisciplinary care program of the facility; (2) nursing services including the development of a nursing care plan for each resident based on an evaluation of his individual nursing needs; and (3) educational programs and research including a continuing education program for the nursing staff; training for care contact personnel; and research on administrative, supervisory, and nursing-care practices. The objectives and philosophy of the nursing department should be determined by the overall program of the facility. The Nursing Director should be on the same level as other department heads in the institution, should participate in developing and carrying out the general organizational goals of the facility; and should have complete responsibility for the selection, use, and dismissal of nursing staff members. (13-item bibliog.)
J. K. Wyatt.

1995 HERYFORD, FRED W., PASEWARK, RICHARD A., GEISLER, JACK, & GUZZETA, CHARLES. A program for high school students at a retardation facility. Paper presented at the 91st annual meeting of the American Association on Mental Deficiency, Denver, Colorado, May 15-20, 1967, 3 p. Typed.

Fourteen junior high school students attended an in-service program that provided both academic and work experience designed to interest them in non-professional or sub-professional careers in the field of MR. The program was conducted in a 10-week summer session at the Wyoming State Training School. Four and one-half hours a week were devoted to classroom periods; lecture and discussion centered on the biological, mental, and social characteristics of MR as well as the operations and functions of the institution. Students also selected assignments for study that were concentrated in a particular field such as psychology, business, or dietetics. Their studies were supplemented with guest lectures, objective final examinations, written and oral reports. The students prepared case reports on their assigned patients for presentation at staff meetings. Eight students received distributive education credit from their respective schools. This program is scheduled to continue for a 5-year period. (No refs.)
G. Trakas.

Wyoming State Training School
Lander, Wyoming 82520

Religion

1996 DENNEY, A. H., ed. . *All Children Are Special: The religious needs of educationally subnormal children.* Oxford, England, Church Army Press, 1967, 87 p. (Price unknown).

Ten members of the Church of England educational council discuss attitudes, legal provisions, treatment, delinquency, and other issues involved in the religious needs of the educationally subnormal child. Extensive commentary on educational provisions, special schools, ordinary classes, and employment greatly enhance the book. Problems experienced by ESN children include: dual handicaps, difficulty in grasping abstract ideas, reading and concentration difficulties, and inability to communicate effectively. Examples of religious programs include a harvest project related to the parable of the sower and the feeding of the 5,000, scrap books, missionary dialogue plays, tape recordings, and a Good Samaritan project. Biblical texts should be simplified so that the educationally subnormal child may have the opportunity to overcome vocabulary and reading difficulties. A modified version of the first chapter of St. Mark's Gospel is offered as an example of simplified biblical readings. The committee further suggests that the statutory age for leaving school should be raised from 15 to 16 years so that children will have more time to prepare for life in a sheltered community, as well as develop personal relationships without feelings of anxiety and

insecurity. Individuals working with the MR in religious educational fields will find this book useful. (14-item bibliog.) - *J. Melton.*

CONTENTS: Special Educational Treatment; Statutory Provision; Communicating the Faith; Worship and Prayer; Religious Education and Backward Children in the Ordinary School; The Parents' Problem--Facing the Truth; The Child and the Parish; The Educationally Subnormal School Leaver; The Educationally Subnormal Delinquent.

1997 SWEENEY, MICHAEL MARIE. A study of attitudes of a religious community toward work with the mentally retarded. *Research Abstracts*, 8:51-53, 1966.

A questionnaire sent to the Benedictine Sisters of Ridgely, Maryland was designed to evaluate their attitudes toward work with the MR for the purpose of relating these attitudes to future work and encouraging other religious communities in undertaking work with the MR. The questionnaire asked for opinions and suggestions concerning the program that the community was presently offering MR children. Eighty percent responded to the first questionnaire with suggestions for improving several weak areas, and no member of the community responded in a completely negative attitude toward work with the MR. The 20 percent who failed to respond to the questionnaire answered a letter supporting the program. This percentage was less informed and less interested in the work of the school. After the questionnaire responses were analyzed, a wide sample of the community was interviewed. These interviews showed that the majority of the community was in favor of the work done by the school. The main objection voiced by the majority of the Sisters was directed toward the educational advantages given to the staff members working at the school. This attitude was illustrative of a lack of understanding of the need for specially trained personnel for work with the MR. The study revealed the need in the community for further professional training within the field of special education. (No refs.) *J. Melton.*

Benedictine Residential
School
Ridgely, Maryland

1998 CHURCH OF ENGLAND BOARD OF EDUCATION. *Number Unknown: A Guide to the Needs and Problems of the Mentally Subnormal Child and His Family.* Denney, A. H., ed. Cowley, Oxford, England, Church Army Press, 1965, 87 p. 7s 6d.

The church has a definite role to play in the care of mentally subnormal children and their families. Clergymen who know and understand families can help them face and understand the nature of MR and the decisions they must make to act constructively and assure the welfare of both their MR child and the whole family. MR children should be baptized and, unless the degree of subnormality is too severe, confirmed. Special confirmation classes with limited numbers of members and simplified procedures should be used with SMRs. Church organizations can be used to educate both family members and the general public about MR, to help individuals clarify their feelings about MR, to recruit volunteer visitors and workers for MR hospitals and training centers, to encourage the severely subnormal to participate in church services, and to extend membership invitations to MRs. Clergymen interested in learning about MR, in exploring ways in which they can best minister to MRs and their families, and in integrating MRs into parish life should find this book useful. (16-item bibliog.) - *J. K. Wyatt.*

CONTENTS: The Nature of the Problem; Pastoral Care; Religion and the Severely Subnormal Child; Statutory and Voluntary Service.

1999 PERSKE, ROBERT. Toward a helpful faith for the mentally retarded. *International Journal of Religious Education*, 44(2):8-9, 1967.

The development of religious education materials for MRs was undertaken by a project committee appointed by the Department of Educational Development, National Council of Churches. The committee heard lectures in special education, psychology, psychiatry, medicine, vocational rehabilitation, social work, and child-care. They worked with local branches of the National Association for Retarded Children and visited 5 institutions for MRs. Curriculum planning included a series for both TMR and EMR extending from the elementary through the adult level. The

Cooperative Publishing Association will issue the TMR series in 1970 to be followed by the EMR series. The learning units will focus on a kinesthetic rather than a verbal approach with stress on sound teacher-student attitudes. These materials will be utilized by churches, workers in culturally deprived areas, camping programs, and sheltered workshops. The committee also plans to campaign for greater church participation in the area of MR; projects under consideration include (1) requesting all churches to devote a Sunday service to the MR; (2) printing church worship folders, folder inserts, and public relations materials; and (3) establishing regional interfaith meetings to elicit better understanding and acceptance of the MR and to fill their spiritual needs. (No refs.)
G. Trakas.

Kansas Neurological Institute
The Menninger Foundation
Topeka, Kansas

PROGRAMS AND SERVICES

Planning and Legislation

2000 ALASKA. *Alaska State Plan for Construction of Facilities for the Mentally Retarded.* Prepared by and available from the Health and Welfare Facilities, Department of Health and Welfare, Pouch H, Juneau, Alaska 99801, 1968, 42 p.

The 1968 Alaska plan for the construction of facilities to meet the needs of MRs was prepared by the state Health and Welfare Facilities Coordinator and includes the recommendations of the State Steering Committee for MR Planning. The plan includes long term recommendations in the areas of program coordination; prevention; casefinding, diagnosis and treatment; research; education; vocational training, sheltered workshops, and employment; personal care, day-care, group and foster homes; recreation, religion, and social groups; manpower; public education; and law. Due to the lack of complete and reliable information from many areas in Alaska, MR incidence and prevalence estimates are based on national averages. Moreover, planning for MRs in Alaska is complicated by underdeveloped transportation and communication systems, by low economy, by the remote geographic residence of almost one-half of the population, and by a lack of qualified professional personnel. Progress in the Anchorage area is expected in the next year. It is suggested that this area concentrate on securing valid statistics on the number of MR residents, establishing a coordinated program for SMR individuals, and evaluating the physical requirements needed to house its coordinated program. (No refs.)
J. K. Wyatt.

2001 International League of Societies for the Mentally Handicapped. *Legislative Aspects of Mental Retardation. Conclusions. Stockholm Symposium.* Brussels, Belgium, The League, 1967, 20 p.

Standards and their implementations, individual rights, and international collaboration were the basic issues discussed at the 1967 Stockholm symposium on legislative aspects of MR. The symposium concluded that (1) facilities for MR persons should be located in remote areas, (2) staff training is essential, and (3) services for MR persons require a comprehensive and multidisciplinary approach emphasizing educational training and rehabilitation. Integration of male and female adults is advocated in day centers, workshops, and in basic leisure time activities. The general principles on individual rights, guardianship, and custody proceedings are presented in detail. A warning is given regarding the rights of the MR in relation to unethical scientific practices. Inter-agency as well as international cooperation is stressed. Research on methods of rehabilitation and prevention should be well directed, adequately financed, and carefully planned. Parent associations and public information policies are encouraged to concentrate on increasing the public's knowledge of MR. (No refs.)
B. Bradley.

CONTENTS: Introduction, Main Conclusions; Terminology; Standards; Implementation of Standards; Individual Rights; International Collaboration.

2002 BOGGS, ELIZABETH M. Legal aspects of mental retardation. In: Philips, Irving, ed. *Prevention and Treatment of Mental Retardation*. New York, New York, Basic Books, 1966, Chapter 24, p. 407- 428.

Although the "due process" and "equal protection" guarantees of the Fourteenth Amendment to the Constitution of the United States apply to MRs and assure their protection in court, the "equal protection" concept requires broadening to provide devices which enable MRs to enjoy the liberties and opportunities offered in a democratic society and to assure the appointment of guardians to make choices for MRs unable to make them for themselves. A program of public guardianship is needed to supplement private guardianship in order to provide effective guardianship opportunities for the quarter of a million adults expected to need them. The development of new opportunities for MRs and the expansion of alternatives to institutional living emphasize the need for service guardians who can actually exercise individual choices for those too retarded to exercise them independently. The authority of guardianship can be used in social management to constructively and creatively extend the community or residential options accessible to MR adults. (22 refs.) - *J. K. Wyatt.*

2003 Proposed legislation related to mental retardation. *Mental Retardation Report*, No. 67-5(March 9):1-11, 1967.

Three federal legislative proposals to combat MR are highlighted. Mental Retardation Amendments of 1967 would extend the community facilities and university-affiliated facilities program to 1972 and provide grants for personnel to operate the facilities. The Social Security Amendments would provide extension of health insurance to the severely disabled under age 65. Child welfare services would be aided through increased federal participation in the cost of employing and training personnel and in finding research and demonstration projects. Additional funds are proposed for early casefinding and treatment of handicapped children and for special projects for maternity and infant care. The Elementary and Secondary Education Act Amendments will expand educational opportunities for handicapped children through provision of funds for recruitment of personnel, establishment of Regional Resource Centers, and expansion of instructional media. (No refs.) *D. Jones.*

2004 McGARRY, A. LOUIS. Law-medicine notes: Proposed new hospitalization laws for the mentally ill and mentally retarded. *New England Journal of Medicine*, 277(1): 38-39, 1967.

The Massachusetts legislature is considering a recodification of 75 current sections based upon the research of the Law-Medicine Institute of Boston University. The provisions of the new code include: (1) immunity from civil damage suits for physicians and policemen who apply for emergency, involuntary hospitalization of the mentally ill; (2) Mental Health Department designation of qualified physicians to make the final judgment regarding admission; (3) amendment of the rule requiring direct examination to require instead a reasonable attempt to directly examine;and (4) compensation for community physicians who treat indigent retarded and mentally ill patients. The new code will contribute to the further development of a noncoercive medical model in public mental hospitals. (No refs.) *J. Snodgrass.*

Boston University School of Medicine
Boston, Massachusetts 02118

2005 Manitoba legislation for education and training of the mentally retarded. *Mental Retardation (Canadian ARC)*, 17(1): 27-28, 1967.

The establishment and maintenance of special classes for both trainable and educable retarded children became mandatory in Manitoba as of July 1967. Previously, due to permissive legislation, the education of the trainable was dependent upon contributions and fees. The new legislation is expected to increase TMR school population by 20 percent and EMR enrollment by 100 percent in the next 3 or 4 years. The Manitoba Department of Health will pay about 65 percent of the cost. (No refs.) - *J. Snodgrass.*

Community Programs

2006 MURPHY, WILLIAM K., & SCHEERENBERGER, R. C. *Establishing Day Centers for the Mentally Retarded--Guidelines and Procedures.* (*Mental Retardation in Illinois*, Monograph Supplement #2.) Springfield, Illinois, Department of Mental Health, 1967, 85 p.

This manual is directed to those persons and organizations desiring to establish day-care centers for the retarded in the State of Illinois and provides guidelines and suggestions for all interested in implementing day care centers. It is divided into 5 major sections and has extensive appendices containing information on forms, bylaws, fee schedules, and Mental Health Zone Centers. The general background section includes definition of basic terms, an overview of available facilities, and projected needs for additional programs. The Day Centers for the MR in Illinois are based on a 5-phase comprehensive program involving the child, the family, and the community. These are: (1) diagnostic and evaluation services, (2) casework counseling, (3) training and activity experiences, (4) vocational training and sheltered workshop, and (5) referral services. The broader administrative aspects associated with the establishment of a day center consist of developmental phases, licensing, and grant-in-aid criteria and procedures. Staffing patterns and personnel qualifications and policies vary considerably from day center to day center. The budgetary concerns involved in providing day-care programs for the MR are discussed and sample financial statements are included. (12 refs.) - *B. Bradley.*

CONTENTS: General Background Information; Program Needs; Administrative Aspects: Developmental Phases, Licensing, Grant-In-Aid Criteria and Procedures; Administrative Aspects: Staffing Patterns, Personnel Qualifications, and Policies; and Administrative Aspects: Budgetary Provisions, and Appendices.

2007 SCHEERENBERGER, R. C., ed. *Training the Severely and Profoundly Mentally Retarded.* (*Mental Retardation in Illinois*, Monograph Supplement #3.) Springfield, Illinois, Department of Mental Health, 1967, 120 p.

This monograph, which focuses on the training of preschool and school age severely and profoundly retarded children, is the result of a 5-day training institute for day care center personnel held in Decatur, Illinois, July 26-30, 1967. The major portion of the program was concerned with: (1) training goals and curriculum, (2) diagnosis, (3) methodology, (4) sensorimotor development, (5) communication skills, (6) arts and crafts, and (7) music. The day care programs in both Illinois and Delaware as well as the Junior College Training Programs in Illinois were discussed in detail. A survey of state supported day programs enabled comparison to be made of types of financial aid, programs, legislation, admission and staff policies, and facilities involved in day-care centers within the United States. Special emphasis was accorded day programs in the State of Illinois. Philosophy and goals were considered as major factors in curriculum planning with teachers as primary decision-makers in education programing. Practical contributions of psychological diagnosis and evaluation are described with the suggestion that the operational definition of intelligence--that is, what the individual can do now--be stressed. The various social competency scales are described and suggestions are made for their use in special education programs. The employment of learning research data in studying the characteristics of retardates is emphasized as well as some operant conditioning procedures, such as behavior shaping techniques for teaching self care skills. Examples and practical suggestions are plentiful, and procedures are presented in detail. Development of improved communication in the retardate is described in terms of perceptual training, and a developmental scale for language levels is shown. The use of music, arts and crafts in aiding growth and development of preschool MR children is also indicated. (149 refs.) - *B. Bradley.*

CONTENTS: Day Programs for the Severely Retarded (Jubenville); Day Programs in Illinois: Present Status and Trends (Murphy); Philosophy, Goals, and Curriculum (Sauter); Psychological Diagnosis and Evaluation of the Severely Retarded: A Programmatic Approach (Cabanski); Use of Social Competency Devices in Programs for the Mentally Retarded (Chambers); Educational Evaluation of the Child in a Day Center for the Mentally

Retarded (McNab); Methodology: General Principles Based on Psychological Research (Scheerenberger); Teaching the Profoundly Retarded Child Through Behavior Shaping Techniques (Colwell); Development of Communication Skills in Retarded Children (Molloy & Witt); The Preschool Retardate: Growth and Development Through Arts and Crafts (Berchert); Music Activities for the Severely Mentally Retarded and Preschool Mentally Retarded (Lesak); Illinois Class I Junior Colleges and Paraprofessional Programs as Part of Occupational Education (McClintock).

2008 JUBENVILLE, CHARLES P. Day programs for the severely retarded. In: Scheerenberger, R. C., ed. *Training the Severely and Profoundly Mentally Retarded.* (*Mental Retardation in Illinois*, Monograph Supplement #3.) Springfield, Illinois, Department of Mental Health, 1967, p. 1-14.

The day-care and training center programs of the State of Delaware are described along with suggestions relating to legislation, programing, finances and future needs. A day-care center is defined as a place in the local community where a program of daily care, training, and/or education is established by a competent staff under control of a department of the state government. A survey of state supported programs in 1964 showed that 24 states were concerned with day-care training programs for the MR and the number of interested states had tripled in 4 years. Titles varied, but all programs focused on local community settings for care and training of MR and handicapped persons. Although daily programs were engaging in training activities, few states had developed a curriculum. Programs were conducted by certified teachers in 7 states and by high school graduates in the remaining states. Pupil-teacher ratios ranged from 5:1 to 11:1. Except for Delaware, all states surveyed provided grant-in-aid to day-care programs. Delaware, which supports its day-care program without charging parents a fee, is unique in that it is the only state-wide, fully state-supported program for the care and training of SMR persons of all ages. State finances range from $100 (flat rate) per capita to a maximum of 80 percent state funds. Delaware's day-care program for the SMR is both child- and parent-centered with primary objectives on habit formation and socialization. Criteria for admission include ambulation and IQs less than 35. Children need not be toilet trained nor possess ability to feed or dress themselves. There is no CA restriction. (5 refs.) - *B. Bradley.*

2009 MURPHY, WILLIAM K. Day programs in Illinois: Present status and trends. In: Scheerenberger, R. C., ed. *Training the Severely and Profoundly Mentally Retarded.* (*Mental Retardation in Illinois*, Monograph Supplement #3.) Springfield, Illinois, Department of Mental Health, 1967, p. 15-21.

Day-care centers are designed primarily to serve preschool retardates at all levels of retardation, school age retardates ineligible for public school classes, and post-school retardates capable of benefiting from formal vocational training or sheltered workshop programs. The community day centers in Illinois are focused on a 5-phase comprehensive program involving the child, his family, and the community. These phases include: (1) diagnostic and evaluation services, (2) casework counseling for the retardate and his family, (3) training and activity experiences, (4) vocational training and sheltered workshop programs, and (5) referral services. In 1966 there were 119 day centers in Illinois serving 4,403 retardates. Since it is estimated that 19,693 retarded children and adults could benefit from day-center programs and that the largest number of them need vocational facilities or sheltered workshop programs, current programs will have to be expanded and their services coordinated with all public and private agencies serving the retarded. The provision of good programs requires a sound financial base; a mental health tax levy can meet this requirement. In the next decade the majority of day-care centers may be using tax funds as the local funding base with supplements from the Department of Mental Health in the form of grants-in-aid. Present methods may be altered, with grant awards given on the basis of a per capita cost for certain program categories. Also, there may be more financial aid for planning day-care services as well as for operating them. (2 refs.) - *B. Bradley.*

2010 Michigan. Mental Health Department. *Operational Aids for Michigan Day Care Centers for the Severely Mentally Retarded.* Lansing, Michigan, 1967, 59 p.

Michigan's state sponsored day-care center program for SMRs, which is both child- and parent-centered, is designed to promote training and techniques in the areas of socialization, communication, motor skills, self-care, program activities, home-center coordination, health, sensory training, evaluations, and administration. SMRs are helped in self-care, language development,

and sensory-physical training, while parents receive counseling and aid in learning to accept their child. SMRs learn to dress, talk, exercise, apply learned skills in school and at home, respond to basic health principles, and to be aware of sense modalities. Through legislature appropriated funds and under the guidance of the Department of Mental Health, the plan operates in connection with cooperative community agencies and clinics. Forms for evaluations, developmental check lists, and other forms are presented. (9 refs.) - *G. Trakas.*

2011 ILLINOIS. INTERDEPARTMENTAL COMMITTEE ON MENTAL RETARDATION. *Guidelines for Establishing Programs and Services for the Mentally Retarded in Proprietary Homes.* (The Subcommittee to Examine and Recommend Program Standards for the Mentally Retarded Placed in Proprietary Homes. *Mental Retardation in Illinois,* Monograph Supplement #1.) Springfield, Illinois, Department of Mental Health, 1967, 23 p. (Price unknown.)

This handbook is directed to people actively involved in establishing programs for the MR in private facilities. It is written by members of a subcommittee formed to develop guidelines for developing services for the MR population in Illinois. Each member of this committee writes about a particular area considered to be essential in providing adequate facilities. The contents focus on the characteristics and the programing needs of the adult MR who have been long-term residents in an institution. Since an important goal for those working with this group is socialization, nursing homes should emphasize: (1) acceptance, (2) affection, (3) attention, (4) joy of achievement, and (5) group experiences. It is suggested that a goal be determined for each retardate and that a daily schedule of related activities be developed. Two basic concerns associated with religious programs are (1) the contributions of religious services to the retardate's well being, and (2) the type of programs in which there can be meaningful participation. In the area of activity programing, a director may be needed to insure a successful program not limited to handicrafts. Since a proprietary home without good recreation promotes a dull environment, 14 basic suggestions are given for direction of a good program. Some therapeutic work activity such as self-care and a basic work program are beneficial, but work habits developed in this program should have an outlet in a vocational rehabilitation program. Volunteer programs allow an expansion of services and create new contacts and interactions with the community. Recommendations for proprietary homes include: licensing by the Illinois Department of Public Health and maintenance of good medical, nursing, and personal care. (11-item bibliog.) - *B. Bradley.*

CONTENTS: Understanding the Retarded; Socialization: A Key Goal in the Placement of Mentally Retarded in Community Facilities (Wagner); The Religious Needs of the Mentally Retarded in Nursing and Sheltered Care Homes (Rostock); Activity Programs (Schuler); Recreation (Downey); Therapeutic Work Activity for the Mentally Retarded (Caldwell); Volunteer Programs; Recommendations for Selection of Proprietary Homes (Heide).

2012 CHOPE, HAROLD D. The organization of community services for the mentally retarded. In: Philips, Irving, ed. *Prevention and Treatment of Mental Retardation.* New York, New York, Basic Books, 1966, Chapter 23, p. 398-406.

In addition to the services of state institutions, specific essential services for the MR should be provided by communities with more than 100,000 population. These services should include: (1) diagnostic clinics to provide early and accurate diagnosis by a basic diagnostic team composed of a pediatrician, psychiatrist, clinical psychologist, psychiatric social worker, public health nurse, and neurologist; (2) parent consultation services; (3) nursery school and recreational activities; (4) classes for EMRs and TMRs; (5) a day-care center; (6) sheltered workshops, vocational training, and job recruitment and placement facilities to enable long-term planning for MRs; and (7) community facilities to provide appropriate care or supervision for an MR subsequent to the parents' death or disability. Counties with populations of 500,000 or more should also provide long-term and short-term residential care facilities. A community program should be multifaceted in that it should consider the differing degrees, etiologies, and prevention methods of MR, and the differing age groups and physical and emotional handicaps of MRs; it should be multi-faceted in that it should provide a wide variety of services; and it should be interdisciplinary in that it should utilize the services of a large number of different professions. (6 refs.) - *J. K. Wyatt.*

2013 KATZ, ELIAS. The mentally retarded adult in the community. In: Philips, Irving, ed. *Prevention and Treatment of Mental Retardation.* New York, New York, Basic Books, 1966, Chapter 19, p. 308-333.

Plans for comprehensive community programs for MR adults should (1) be related to community planning for all citizens and for all handicapped individuals; (2) provide a continuum of unbroken services beginning in childhood; (3) be drawn up both by the professionals who provide services and by the MRs and their families who receive them; (4) provide for research, program evaluation, and preparation of professional workers; and (5) contain a coordinating mechanism which makes it possible for MR adults to obtain available services and for service agencies to coordinate their work in an efficient and effective manner. There has been a significant development of community programs for MR adults in conjunction with vocational training and rehabilitation services. This development is illustrated by the San Francisco program, which provides comprehensive and coordinated services financed by local, state and federal funds. Community programs for recreation, residential care, and parent-counseling ought to be developed. (32 refs.) - *J. K. Wyatt.*

2014 KATZ, ELIAS. *The Retarded Adult in the Community.* Springfield, Illinois, Charles C. Thomas, 1968, 267 p. $10.75.

Community programs developed for MR adults should include: the provision of a place in the community for all MRs; activities designed to integrate them into the community; specific referral and information services for MRs and their families;easily accessible, comprehensive services of the highest quality provided for all age-levels; coordination of public, private, and individual services; involvement of all sectors of the community in program planning; and provision for continuous program evaluation. To enable MRs to reside in the community rather than in institutions, communities must provide satisfactory ways for them to meet their residential, vocational, marital, health, medical, educational, recreational, religious, counseling, and therapy needs. Direct services can provide comprehensive evaluations of MR adults and identify capacities and limitations. These findings can then be used to set goals and to select community facilities best suited to the needs of each individual. Recent suggestions for services intended to provide increased understanding of MR adults include: (1) establishing a research and development center to carry on a comprehensive MR research program, (2) carrying out a national survey to provide specific information on the number and distribution of MRs, (3) opening neighborhood centers for MRs in poverty areas, (4) allowing MRs to participate in program planning, (5) providing extensive follow-up services after a case has been closed, (6) establishing long-term workshops for the less able, (7) grouping MRs into supervised community work teams, and (8) providing junior college and adult education classes for MRs. Educators, rehabilitation counselors, physicians, social workers, psychologists, nurses, and all those who work with MRs and their families and are interested in extensive, coordinated community planning and interdisciplinary services for MRs will find this book of interest. (198 refs.) - *J. K. Wyatt.*

CONTENTS: What Is Meant By the Retarded Adult in the Community?; Why Be Concerned About the Retarded Adult in the Community?; How Is the Retarded Adult Evaluated in the Community?; What Are the Needs of the Retarded Adult in the Community?; How Are Some Needs of the Retarded Adult Met in the Community?; How Are the Vocational Needs of the More Able Retarded Adult Met in the Community?; How Are the Needs of the Less Able Retarded Adult Met in Long-Term Workshops?; How Are the Needs of the Least Able Adult Met in the Community?; What Counseling Is Available to Parents of the Retarded Adult in the Community?; What Is the Most Effective Program for the Retarded Adult in the Community?; What Are Some Approaches to Program Planning for the Retarded Adult in the Community?; Current Trends and Ideas.

2015 LYTH, A., & CORPE, J. Experience with a hostel for subnormal adults. *Teaching and Training,* 6(3):77-79, 1967.

The mentally subnormal living in British hostels are best served when there are 20 to 25 residents and when regulations are neither too authoritarian nor too permissive. The hostel should serve residents as a training and rehabilitation facility, not as a hospitalized care and treatment center. Residents should be trained within the hostel or in sheltered workshops in preparation for a return to normal community living.

The most important staff member is the social worker who visits the resident, his family and relatives, and who seeks employment for his client. During holidays, while regular residents are vacationing with their families, the hostel facilities can be utilized for short-term admission of subnormals who ordinarily live at home. These short-term admissions are recommended because they give the non-resident subnormals a holiday from the routine of the home environment while providing their families with a needed rest from the problems of coping with a subnormal child. Both sexes should be accommodated with similar age groups sharing bedrooms and older residents having priority for single bedrooms. When residents are released they should be encouraged to maintain contact via weekend and holiday visits so that they may maintain a feeling of family background and hostel support. (No refs.) - *J. Melton.*

No address

2016 FRAENKEL, WILLIAM A. Community oriented rehabilitation programs and services for the mentally retarded. Paper presented at the 91st annual meeting of the American Association on Mental Deficiency, Denver, Colorado, May 15-20, 1967, 9 p. Mimeographed.

As part of a program to achieve a more harmonious and productive affiliation between state residential institutions and community agencies for the MR, New York State is establishing 30 comprehensive, community-oriented MR centers. State schools will no longer function as separate facilities but instead will operate as part of a comprehensive center providing the community with such services as: information, referral, diagnosis, treatment, preschool classes, school classes, day training, vocational rehabilitation, employment, sheltered workshops, hostels, after-care programs, and parent education. Between 1967-1975, any gaps in the services will be filled by additional community-based programs. With regard to the pressing problem of overcrowded institutions, New York is prepared to implement the recommendations of the President's Panel and accelerate the change from large isolated facilities to smaller units close to community resources. MR centers will develop in cities where MRs are identified, where professional and lay leadership is available, where the community has begun to meet the needs of MRs, where families are oriented to the MRs' needs, where state planning indicates a priority for MR centers, and where funds are appropriated. (3 refs.) - *G. Trakas.*

New York City Chapter
New York State Association for
Retarded Children, Inc.
New York, New York

2017 SARASON, SEYMOUR B., LEVINE, MURRAY, GOLDENBERG, I. IRA, CHERLIN, DENNIS L., & BENNETT, EDWARD M. *Psychology in Community Settings*, New York, New York, John Wiley & Sons, 1966, 714 p. $12.95.

The approach of the Psycho-Educational Clinic at Yale University to MR emphasizes the importance of evaluating both the inadequacies and potentialities of public school programs for MR children and the interrelationships of MR, the schools, and the unique problems found in inner-city areas. The clinic is affiliated with a new facility--the New Haven Regional Center for the MR. The formative goals of this center, which represent a departure from traditional ways of organizing services and locating institutions, emphasize: (1) eliminating the need for large, expensive institutions; (2) locating in a geographical area where service to the largest number of MR children is possible; (3) reducing duplication of services by making the fullest possible use of existing community resources; and (4) providing a variety of educational, vocational, and recreational services aimed at helping parents to maintain MR children in their own homes. The clinic is in the process of conducting a pilot program designed to investigate the possibility of using highly selected, late-adolescent boys and girls from the inner city as aids in education, care and/or management programs. The goal of the Psycho-Educational Clinic is one of service to the community. In its attempt to move out of the traditional consultant role, it is dealing with questions concerning where it can best serve the community and what the nature, scope, and depth of its involvement ought to be. This book should be of interest to doctors, educators, psychologists, social workers, and all those interested in community mental health especially as it pertains to inner-city areas. (70 refs.) - *J. K. Wyatt.*

CONTENTS: Historical and Professional Origins of the Psycho-Educational Clinic; The Schools; Community Progress Incorporated; New Haven Regional Center.

326-079 O - 68 - 11

2018 MOORING, IVY. Community planning for the mentally retarded in Los Angeles County. In: U. S. Children's Bureau. *New Frontiers in Mental Retardation.* (Clinical Directors' Mental Retardation Conference held June 5-7, 1966, Asilomar, California.) Washington, D. C., 1966, p. 24-31.

The purpose of the MR Joint Agencies Project established in 1963 in Los Angeles county, California, was to develop a master plan of county services for MRs and to devise methods of implementing this plan. The initial project was to evolve a comprehensive model of needed services including clinical, vocational, social, and educational programs as well as research training and public education requirements. A comparison of this model with currently available programs identified areas where services were lacking as well as those areas requiring expanded services. Problems encountered in the provision of services were lack of trained professional staff, large caseloads, limited budgets, and exclusive eligibility requirements. The development of coordinated programs was deterred by the absence of standardized procedures for intra- and interagency communication, lack of a standardized definition of MR, and failure to identify MRs. In August 1965, the Mental Retardation Services Board was formed to carry out the recommendations of the Joint Agencies Project and to coordinate the services provided by public and private agencies. This board has been responsible for the establishment of preschool programs, day-care centers, regional centers, and rehabilitation programs. (No refs.) - *J. K. Wyatt.*

2019 DEISHER, ROBERT W. Mental retardation--past, present and future. In: U. S. Children's Bureau. *New Frontiers in Mental Retardation.* (Clinical Directors' Mental Retardation Conference held June 5-7, 1966, Asilomar, California.) Washington, D. C., 1966, p. 103-110.

MR clinics ought to move beyond the provision of evaluative services and assume responsibility for the continuing care of MRs by providing or coordinating needed services, assuming an active follow-up role, evaluating the effectiveness of programs offered by referral agencies, and promoting the establishment of needed services not presently available. The University of Washington has established an MR research center and an affiliated center to carry on basic research, clinical service, and training. The affiliated unit contains diagnostic and evaluative services, a school, and a residential program. The university is responsible for conducting local diagnostic clinics which offer evaluative services on a part-time basis throughout the state and which utilize local professional staffs trained by university personnel, for handling problem cases requiring elaborate work-up procedures, for the provision of consultation services, and for setting up MR workshops. Anticipated services in the new center include physical and occupational therapy facilities, nutrition services, a homemaker service, broader counseling and psychiatric services, increased dental facilities, expanded educational assessment facilities, and a motel-type residential unit. (No refs.) - *J. K. Wyatt.*

2020 KOCH, RICHARD, BAERWALD, ANN, McDONALD, JOAN, FISHLER, KAROL, & ROCK, HERBERT. The Child Development Traveling Clinic Project in southern California: A report of the first seven years (1959-1965). In: U. S. Children's Bureau. *New Frontiers in Mental Retardation.* (Clinical Directors' Mental Retardation Conference held June 5-7, 1966, Asilomar, California.) Washington, D. C., 1966, p. 32-46.

The program of the Traveling Child Development Clinic Project at Children's Hospital, Los Angeles, California, focused on the diagnostic evaluation of preschool MR children and on parent counseling. The original clinic objectives, which appear to have been accomplished, centered on (1) utilizing a multidisciplinary team approach to deal with the problems presented by MR, (2) stimulating local professional interest in MR, (3) aiding communities in planning and developing MR diagnostic facilities for children, and (4) stressing the importance of the pediatrician's role in identifying, treating, and preventing MR and its associated handicaps. The majority of the 1,049 children evaluated during this period were multiply handicapped and SMR. However, MR in 34 percent of the children was due to cultural and psychological causes. Early diagnosis of these pseudo-retarded children may lead to care which might prevent further deterioration and forestall later institutionalization. The Project primarily served middle-income families. Four hundred and eighty-eight professionals participated. Community

requests for the services of the Traveling Clinic at the moment are so numerous that they cannot be met by the present staff. (7 refs.) - *J. K. Wyatt.*

Protective Services

2021 Personal finance: Retarded children. *Pennsylvania Message*, 3(3):7, 1967. (Reprinted from New York Times, May 11, 1967.)

New York State and Federal Social Security laws have been amended to give more financial aid to the MR. Those retarded between the ages of 5 and 21 for whom the public school system has no facilities are eligible for up to $2,000 a year for care and training in private institutions (including training for "competitive employment"). Due to the shortage of facilities, the length of the waiting lists at public schools does in reality bar the children from school without officially doing so. Retarded Infants Service provides supplemental fees for care of severely retarded infants, home aides for assistance to mothers of MRs, and free psychiatric care for the infant and for affected family members. Under Social Security, MRs are eligible for childhood disability benefits if they are permanently unable to earn a living. MRs over 21 are eligible for state Medicaid. (No refs.) *E. F. MacGregor.*

2022 HILL, DENIS. Economic and ethical considerations arising from modern care of the defective child and the very old. *Proceedings, Royal Society of Medicine*, 60(11):1232-1234; discussion, 1234-1235, 1967.

Doctors have a responsibility to maintain the life of the defective child and the aged by using all ordinary means even though it might conflict with the economic interests of society. In the decade from 1954-1963, the number of mentally defective patients in England's subnormality hospitals increased by 6,500, while the shortage of teachers, doctors, and nurses interested in providing care for these MRs also increased. Hospital costs of caring for those with congenital malformations is less than £4 million/annum, yet over £10 million/year is spent locally on care for the less severely retarded. Hospital care for the senile costs less than £4 million, but it is not known what proportion of the £132 million a year spent on mental health services is allocated for care of the aged psychotic. Of those aged living at home, 10 percent are shut-ins who have very little contact with outside personnel who could be providing them with services. A survey found that the average geriatric unit drugs ranged from £5 for 1 patient to 3 1/4*d* for another. Better schooling for the mentally defective would help reduce the need for beds in the hospitals. (12 refs.) - *G. M. Nunn.*

Institute of Psychiatry
London, England

2023 RUSK, HOWARD A. Social Security's new benefits for the disabled. *Journal of the American Physical Therapy Association*, 47(2):144-146, 1967.

The Social Security Amendments of 1965 extend monetary benefits and vocational rehabilitation services to more people by easing eligibility requirements for the disabled. Disability is defined as the inability to perform any work for which one is suited by age, education, or experience. To qualify for disability benefits, an applicant must have social security credits for 5 of the 10 previous years. Benefits may begin with the seventh month of disability and last for its duration. Increased federal monetary appropriations to state agencies will make more services available to more applicants. Extensive counseling and placement services are the major needs of the disabled and an intermediate placement between sheltered workshops and competitive employment is often necessary. Rehabilitation incentives include extending payments through the first year of work, withholding benefits to those who refuse rehabilitation services, and giving special consideration to those who return to work and become disabled again. The program also has a provision for "childhood disability." A person continuously disabled before age 18

becomes eligible at age 18 to receive benefits for as long as his disability lasts. The program is particularly important for parents of MR, since MR children who outlive their parents will be assured of care. MR is a major factor in more than 65 percent of childhood disability cases. (No refs.) *R. D. Perkins.*

Institute of Rehabilitation
Medicine
New York University Medical Center
New York, New York

2024 Social Security Amendments of 1967. *Programs for the Handicapped*, 68 (January 12):1-6, 1968.

The 1967 social security amendments benefit the handicapped in health insurance (possible medicare coverage), child welfare (foster homes and parent counseling), and child health (early casefinding and treatment). Federal grants to states assist crippled children's agencies in locating, diagnosing, and servicing the handicapped. Costs for prenatal clinics are shared by national, state, and local governments. Examinations of mother and child, immunization, and advice on the prevention of illness are offered. In rural counties and large cities, 54 special projects for maternal and infant care are admitting 9,000 patients a month. Some 211 grants have been awarded for 100 research projects centering on problems related to health services for mothers and children. Areas of study include MR, infant mortality, and prenatal care. (No refs.) - *G. Trakas.*

PARENTS AND FAMILY

2025 BASS, MEDORA S. Attitudes of parents of retarded children toward voluntary sterilization. *Eugenics Quarterly*, 14(1): 45-53, 1967.

The attitudes of 132 parents regarding voluntary sterilization of their MR children were investigated and were found to be related to religion and information level. The sample is biased since the Ss, all of whom were normal parents of MR children, had volunteered through their local parent association, and those individuals most opposed to sterilization did not participate. The test was adapted from the Thurstone type attitude scale and consisted of 88 cards, each bearing a different statement about sterilization. The parents were asked to sort the statements into 11 piles according to whether they regarded an opinion as most favorable or most unfavorable. Information scores and intensity scores were measured separately. The Ss consisted of 26 Catholics (19.5 percent), 10 Jews (7.6 percent), 74 Protestants (56 percent), and 22 undesignated (16.6 percent). Sixty percent of the total sample approved of sterilization, with approval coming from 72 percent of the Protestants, 60 percent of the Jews, 16 percent of the Catholics, and 73 percent of the undesignated. Approval was positively correlated with intensity and information levels. More than 1/3 thought that sterilization and castration were synonymous, and many were unaware that sterilization is legal in almost all states. It appears that respect for a religious minority is impeding research in the area of voluntary sterilization. Counseling on the legal, scientific, and moral aspects of sterilization would appear to be very important. (16 refs.) *R. Froelich.*

No Address

2026 BEGAB, MICHAEL J. The mentally retarded and the family. In: Philips, Irving, ed. *Prevention and Treatment of Mental Retardation.* New York, New York, Basic Books, 1966, Chapter 7, p. 71-84.

Although the effects of MR on the family are diverse and depend on a number of variables, an MR individual, particularly one whose degree of MR causes him to be different from other family members, may present problems which are related to (1) psychological and emotional reactions and their effect on the stability of the family; (2) care and management; (3) education, guidance and training; and (4) future care planning. In a deprived family, when the degree of MR does not set the child apart from the rest of the family, problems may be due to deficiencies in child-rearing practices and to the effects of external community pressures; they

may arise because of school failure, conflict with neighbors, neglect and abuse of the child, and limited work skills and earning ability. The specific family situation in each case must be determined with care in order to correctly identify the nature of the problem and its underlying dynamics. (8 refs.) - *J. K. Wyatt.*

2027 Mental handicaps and the family. *British Medical Journal*, 4(5570): 5-6, 1967.

Many mentally subnormal children do better at home than in institutions, if their families are given assistance and guidance in caring for them. A multidisciplinary team approach for diagnosis, assessment, and management is recommended in conjunction with comprehensive, well coordinated social services and parent counseling. (6 refs.) - *J. Snodgrass.*

2028 BARSCH, RAY H. *The Parent of the Handicapped Child: The Study of Child-rearing Practices*. Springfield, Illinois, Charles C. Thomas, 1968, 435 p. $11.50.

Interview and questionnaire procedures were used to investigate the child-rearing practices of parents of handicapped children. Each of the 177 families studied had a handicapped child who was either cerebral palsied, minimal brain damaged, deaf, blind, or mongoloid. Results showed that (1) child-rearing practices tended to be similar regardless of differences in the nature of the children's handicaps; (2) when differential practices were present, they appeared to be a function of differential parent personality rather than of a specific type of handicap; (3) the majority of parents did not evidence the stereotypic cluster of characteristics, (guilt, anxiety, rejection, and overprotection) associated with the parents of the handicapped; (4) the birth of a handicapped child had not caused parents to become social isolates; (5) no significant differences were found between the child-rearing practices used with handicapped children and those used with their siblings; (6) parent simplification of language to accommodate the receptive ability of a handicapped child was accomplished on a trial and error basis, and parents evidenced a need for professional help with language structuring; (7) there was general acceptance of a handicapped child by his siblings with only minimal evidence of negative attitudes and behaviors; and (8) there was general agreement by both parents on questions regarding their child-rearing practices. The necessity of adding specially trained, professional parent counselors to existing special education teams is indicated. Parents of handicapped children and professional workers seeking to guide them will find the findings of this study useful. (53-item bibliog.) - *J. K. Wyatt.*

CONTENTS: Introduction; Conducting the Study; The Demography of the Five Populations; Initial Concern and Action; Patterns of Communication; Patterns of Toilet Training; Rest and Sleep Patterns; Patterns of Restriction, Demand and Allowance; The Parent and Child Sex Behavior; Sibling Attitudes and the Question of Family Limitation; The Parent and the Community; Schooling and Expectations for the Future; Patterns of Discipline; The Parent and Religion; The Parents Perceptions and Attitudes; The Handicapped Ranking Scale; Summary: Critique and Proposal.

2029 U. S. SOCIAL AND REHABILITATION SERVICE. *Selected Reading Suggestions for Parents of Mentally Retarded Children.* Timberg, Eleanor Ernst, & Gorham, Kathryn Aring. Washington, D. C., Children's Bureau, 1967, 29 p.

The annotated list of easily available and recent books, pamphlets, directories, and periodicals on MR is designed for parents and families seeking information about MR. General information is included on growth and development, the problem of MR, and conditions involving multiple handicaps. A group of publications are aimed at helping parents to understand specific problems posed by school age, adolescent, and young adult MRs and to make the necessary educational and training choices. Additional topics include information on the home management of an MR child, music, art, play,

recreation, guardianship, and personal accounts by those who work with MRs. (88-item bibliog.) - *J. K. Wyatt.*

2030 VAN DER HOEVEN, J. *Slant-Eyed Angel.* Buckinghamshire, England, Colin Smythe, 1968, 128 p. $3.00. (Translated by Mieke Zwart from the Dutch *Scheel Engeltje*, 1949.)

With the acceptance of the pain and suffering caused by the birth of a mongoloid son, the father begins to learn to know the child as he is without comparing him with others, discovers his happiness with the boy, and through his relationship with the child arrives at a richer understanding of the meaning of life. When he faces up to the MR condition of his son, the father is interpreting life as a demand for meekness and an unconditional acceptance of that which is given rather than of that which would have been preferred. As the child finds his place in the family, parents, brothers, sisters, and friends come forward to be of assistance. The father finds himself unable to pray for the healing of this child. Instead he regards the boy as someone sent to help him understand another world, and he prays that he will hear his message more clearly. The spiritual approach to the problems presented by MR which is presented in this book should be of interest to parents and relatives of MR children. (No refs.) - *J. K. Wyatt.*

2031 HALEY, JAY, & HOFFMAN, LYNN. *Techniques of Family Therapy.* New York, New York, Basic Books, 1967, 480 p. $12.50.

Although family therapy is a relatively new approach to the cause and cure of psychiatric problems, a variety of methods have emerged which may differ in theory and practice but are based on the common assumption that individual change is dependent on change in life context. The unit of treatment for family therapy is the set of relationships in which the person is embedded, and not the person himself. This series of intense conversations with 5 family therapists, each of whom has a distinctive working style, includes verbatim transcripts of representative initial interviews with families planning to continue treatment and discussions between the authors and therapists which explain each therapist's general therapeutic style, interaction processes in the human family, what happens among the close relatives of psychiatric patients and social deviants, the thinking behind the strategy employed with each family, and the course of the unfolding encounter between therapist and family. This book should be of interest to psychiatrists, psychologists, and social workers seeking experienced guidance in the performance of family therapy. (169-item bibliog.) - *J. K. Wyatt.*

CONTENTS: No Man's Land; A Family of Angels; The Eternal Triangle; The Growing Edge; Cleaning House.

PUBLICATIONS SCANNED

The following publications are scanned regularly for articles pertinent to mental retardation.

AAUP Bulletin
ACLD Items of Interest (Association for Children with Learning Disabilities)
ACT (American College Testing Program) Research Reports
ALA Bulletin (American Library Association)
ASHA: A Journal of the American Speech & Hearing Association
AV (Audio-Visual) Communication Review
Abstracts of World Medicine
Academic Therapy Quarterly
Acta Anatomica
Acta Biologiae Experimentalis
Acta Chirurgiae Plasticae
Acta Endocrinologica
Acta Genetica et Statistica Medica
Acta Geneticae Medicae et Gemellologiae
Acta Haematologica
Acta Medica Scandinavica
Acta Neurologica et Psychiatrica Belgica
Acta Neuropathologica
Acta Opthalmologica
Acta Oto-Laryngologica
Acta Paediatricia Belgica
Acta Paediatrica Scandinavica
Acta Paedopsychiatrica
Acta Pathologica et Microbiologica Scandinavica
Acta Physiologica Polonica
Acta Psiquiatrica y Psicologica de America Latina
Acta Psychiatrica Scandinavica
Acta Psychologica, Amsterdam
Activitas Nervosa Superior
Administrative Science Quarterly
Adult Education
Adult Leadership
Aerospace Medicine
Aerzliche Forschung
Agricultural Education Magazine
Alberta Journal of Educational Research
Alberta Psychologist
Amentia
America Latina, Brazil
American Annals of the Deaf
American Anthropologist
American Association for Health, Physical Education, and Recreation Research Quarterly
American Association of Colleges for Teacher Education Yearbook
American Association of School Administrators Official Report
American Behavioral Scientist
American Biology Teacher
American Child
American Council on Industrial Arts Teacher Education Yearbook
American Ecclesiastical Review
American Education
American Educational Research Journal
American Foundation for the Blind, Research Bulletin
American Heart Journal
American Institute of Architects Journal
American Journal of Cardiology
American Journal of Clinical Hypnosis
American Journal of Clinical Pathology
American Journal of Digestive Diseases
American Journal of Diseases of Children
American Journal of Human Genetics
American Journal of Medical Sciences
American Journal of Medicine
American Journal of Mental Deficiency
American Journal of Nursing
American Journal of Obstetrics and Gynecology

American Journal of Occupational Therapy
American Journal of Ophthalmology
American Journal of Optometry & Archives of American Academy of Optometry
American Journal of Orthodontics
American Journal of Orthopsychiatry
American Journal of Pathology
American Journal of Physical Medicine
American Journal of Physiology
American Journal of Proctology
American Journal of Psychiatry
American Journal of Psychoanalysis
American Journal of Psychology
American Journal of Psychotherapy
American Journal of Public Health
American Journal of Roentgenology
American Journal of Roentgenology, Radium Therapy, and Nuclear Medicine
American Journal of Sociology
American Journal of Surgery
American Journal of Tropical Medicine and Hygiene
American Music Teacher
American Psychologist
American Review of Respiratory Diseases
American School & University
American School Board Journal
American Sociological Review
American Sociologist
American Surgeon
American Vocational Journal
Anaesthesia
Analyse et Prevision, France
Anatomical Record
Andover Newton Quarterly
Anesthesia and Analgesia: Current Researches
Anesthesiology
Angiology
Anglican Theological Review
Animal Behavior
Annales Medico-Psychologiques
Annales Paediatriae Fenniae
Annales de Pediatrie
Annali Sociologia, Italy
Annals Institute de Pasteur, Paris
Annals of Allergy
Annals of Human Genetics
Annals of Internal Medicine
Annals of Surgery
Annals of the New York Academy of Sciences
Annals of the Rheumatic Diseases
Annals of Thoracic Surgery
Annee Psychologique
Annual of Animal Psychology, Tokyo
Antibiotiki
Antioch Review
Architects' Exchange
Architectural Forum
Architectural Record
Archives Francaises de Pediatrie
Archives Italiennes de Biologie
Archives of Biochemistry and Biophysics
Archives of Dermatology
Archives of Disease in Childhood
Archives of Environmental Health
Archives of General Psychiatry
Archives of Internal Medicine
Archives of Neurology
Archives of Ophthalmology
Archives of Otolaryngology
Archives of Pathology
Archives of Physical Medicine
Archives of Surgery
Archiv für die gesamte Psychologie
Archiv für Geschwulstforschung
Archiv für Kinderheilkunde
Archiv für Kreislaufforschung
Archiv für Psychiatrie und Nervenkrankheiten
Archivio di Psicologia, Neurologia e Psichiatria
Archivos de Crimonologia, Neuropsiquiatria y Disciplinas Conexas
Arhiv za Higijenu Rada i Toksikologiju
Arithmetic Teacher
Arizona Teacher
Art Education
Arthritis and Rheumatism
Arts and Activities
Association for Student Teaching Yearbook
Association for Supervision and Curriculum Development Yearbook
Athletic Journal
Audiovisual Instruction
Australian Children Limited
Australian Journal of Experimental Biology and Medical Science
Australian Journal of Psychology
Australian Paediatric Journal

BINOP: Bulletin de l'Institut National d'Etude du Travail et d'Orientation Professionnelle
Balance Sheet
Behavior
Behavioral Science
Behavior Research & Therapy
Biochemical and Biophysical Research Communications
Biochemical Journal
Biochemical Medicine
Biochemistry
Biochimica et Biophysica Acta, Amsterdam
Biofizika
Biologia Neonatorum
Biomedical Engineering, London
Biometrics
Blood
Blut
Boletin Informativo (Instituto Nacional de Psiquiatria Infantil)
Boletin Informativo del Instituto Neurologico de Guatemala
Brain
British Heart Journal

British Journal for the Philosophy of Science
British Journal of Clinical Practice
British Journal of Criminology
British Journal of Dermatology
British Journal of Educational Psychology
British Journal of Educational Studies
British Journal of Industrial Medicine
British Journal of Medical Psychology
British Journal of Ophthalmology
British Journal of Preventive and Social Medicine
British Journal of Psychiatric Social Work
British Journal of Psychiatry
British Journal of Psychology
British Journal of Radiology
British Journal of Social and Clinical Psychology
British Journal of Surgery
British Medical Journal
Broadcaster (Newsletter of the Beatrice State Home, Beatrice, Nebraska)
Bulletin (Council of Social & Psychological Research, Calcutta)
Bulletin de l'Association Internationale de Psychologie Appliquée
Bulletin de Psychologie Scolaire et de'Orientation
Bulletin du C.E.R.P.
Bulletin of Art Therapy
Bulletin of the British Psychological Society
Bulletin of the Dental Guidance Council for Cerebral Palsy
Bulletin of the Los Angeles Neurological Society
Bulletin of the Maritime Psychological Association
Bulletin of the Menninger Clinic
Bulletin of the National Association of Secondary School Principals
Bulletin of the New York Academy of Medicine
Bulletin of the School of Education (Indiana U.)
Business Education Forum
Business Education World
Byulletin' Eksperimental' noi Biologii i Meditsiny

CTA (California Teachers Association) Journal
Cahiers de Psychologie
Cahiers de Sociologie Economique
California Education
California Elementary School Administrators Association Monographs
California Journal of Educational Research
California Mental Health Research Digest
Canada's Mental Health
Canada's Mental Health Supplement
Canadian Anaesthetists' Society Journal
Canadian Education and Research Digest
Canadian Journal of Biochemistry
Canadian Journal of Physiology & Pharmacology
Canadian Journal of Psychology
Canadian Journal of Surgery
Canadian Journal of Theology
Canadian Medical Association Journal
Canadian Nurse
Canadian Psychiatric Association Journal
Canadian Psychologist
Canadian Review of Sociology and Anthropology
Cancer
Cancer Research
Cardiovascular Research
Casopis Lekaru Ceskych
Catholic Charities Review
Catholic Educational Review
Catholic Psychological Record
Catholic School Journal
Centro Ricerche Biopsichiche
Cerebral Palsy Journal
Ceskoslovenska" Psychiatrie
Ceskoslovenska" Psychologie
Character Potential
Cheshire Smile
Child & Family
Child Development
Childhood Education
Children
Children Limited
Children's House
Child Study
Child Study Center Bulletin (State University Coll. New York, Buffalo)
Chirurg
Christianity and Crisis
Christianity Today
Christian Scholar
Circulation
Circulation Research
Claremont Reading Conference Yearbook
Classical Journal
Clearing House
Clergy Review
Clinica Chimica Acta
Clinical and Experimental Immunology
Clinical Chemistry
Clinical Pediatrics
Clinical Pharmacology & Therapeutics
Clinical Proceedings of Children's Hospital of the District of Columbia
Clover Leaves-Observer
College and University
College English
College Student Survey
Color Engineering
Community Mental Health Journal
Comparative Education Review
Comprehensive Psychiatry
Concordia Historical Institute Quarterly
Conditional Reflex

Conference on Reading (University of Chicago)
Confina Psychiatrica
Connecticut Health Bulletin
Contemporary Education
Contemporary Psychoanalysis
Contributi dell'Instituto di Psicologia
Cornell Journal of Social Relations
Corrective Psychiatry & Journal of Social Therapy
Cortex
Council for Research in Music Education
Counselor Education & Supervision
Courrier
Crime & Delinquency
Current Contents: Life Sciences
Current Therapeutic Research
Cytogenetics

DSH Abstracts
Dapim Refuiim
Defence Science Journal
Delaware Association for Retarded Children--News
Deutsche Medizinische Wochenschrift
Deutsches Aerzteblatt
Developmental Medicine and Child Neurology
Diabetes
Diabetologia
Diagnostica: Zeitschrift für Psychologische Diagnostik
Didakometry
Difesa Sociale
Digest of the Mentally Retarded
Diseases of the Chest
Diseases of the Colon and Rectum
Diseases of the Nervous System
Dissertation Abstracts
Doklady Akademii Nauk SSSR
Doshkol' noe Vospitanie

ETC: A Review of General Semantics
Economic Development and Cultural Change
Education
Educational & Psychological Interactions
Educational & Psychological Measurement
Educational Forum
Educational Leadership
Educational Record
Educational Records Bureau Bulletins
Educational Research (British)
Educational Screen AV (Audio-Visual) Guide
Educational Theatre Journal
Educational Theory
Education & Psychology Review
Education & Training of the Mentally Retarded

Education Digest
Education Index
Ek'sperimental ev Klinikakan Bzhshkowt'yan Handes
Electroencephalography & Clinical Neurophysiology
Elementary English
Elementary School Journal
Encephale
Encounter
Endocrinology
Enfance
English Journal
English Language Teaching
Environmental Research
Epilepsia
Ergonomics
Eugenics Quarterly
Eugenics Review
Evangelische Theologie, Germany
Evolution Psychiatrique
Exceptional Children
Excerpta Criminologica
Experimental Neurology
Explorations in Entrepreneurial History
Expository Times

Family Care Newsletter
Family Law Quarterly
Family Life Coordinator
Family Process
Farmakologiya i Toksikologiya
Federation Proceedings
Fertility and Sterility
Fiziologicheskii Zhurnal SSSR
Flight Safety
Forecast for Home Economics
Fortschritte auf dem Gebiete der Rötgenstrahlen und der Nuklearmedizin
Forum
Forward Trends
Foundations
Free University Quarterly, Holland
French Review

GAP (Group for the Advancement of Psychiatry) Report
Gastroenterology
Gastrointestinal Endoscopy
Gawein
General Practice
Genetic Psychology Monographs
Geriatrics
German Medical Monthly
German Quarterly
Gerontologia

Gerontologia Clinica
Gerontologist
Gifted Child Quarterly
Gordon Review
Grade Teacher
Graduate Research in Education & Related Disciplines
Group Psychotherapy

Hachinuch
Harefuah
Harvard Educational Review
Harvard Theological Review
Headache
Health, Education & Welfare Indicators
Health Laboratory Science
Heilpadagogische Werkblatter
Helvetica Paediatrica Acta
Hibbert Journal
High Points
High School Journal
Hispania
History of Education Quarterly
History of Religions
Homiletic and Pastoral Review
Hommes et Techniques
Hospital (Rio de Janiero)
Hospital and Community Psychiatry
Hospital Practice
Hospitals
Human Biology: An International Record of Research
Human Development
Human Factors
Humangenetik
Human Relations
HumRRO Professional Paper
HumRRO Technical Report
Hygiene Mentale

ICRH Newsletter
IEEE Transactions on Human Factors in Electronics
Illinois Education
Illinois Medical Journal
Illinois Schools Journal
Immunology
Impact of Science on Society
Improving College and University Teaching
Indian Educational Review
Indian Journal of Extension Education
Indian Journal of Psychology
Indian Journal of Social Work
Indian Journal of Theology
Indian Psychological Review
Individual Psychologist
Industrial Arts and Vocational Education/ Technical Education
Industrial Relations
Information Psychologique
Insight: Quarterly Review of Religion & Mental Health
Institute of Dream Research Monograph Series
Instructor
International Archives of Allergy and Applied Immunology
International Bureau of Education Bulletin
International Child Welfare Review
International Journal for the Education of the Blind
International Journal of Clinical & Experimental Hypnosis
International Journal of Fertility
International Journal of Group Psychotherapy
International Journal of Neuropharmacology
International Journal of Neuropsychiatry
International Journal of Parapsychology
International Journal of Psychiatry
International Journal of Psycho-Analysis
International Journal of Psychology
International Journal of Religious Education
International Journal of Social Psychiatry
International Journal of Sociometry & Sociatry
International Nursing Review
International Rehabilitation Review
International Review of Education
International Review of Missions
International Social Science Journal
International Yearbook of Education
Irish Journal of Medical Science
Israel Annals of Psychiatry & Related Disciplines
Israel Annals of Psychology and Related Disciplines
Israel Journal of Medical Sciences

Japanese Journal of Child Psychiatry
Japanese Journal of Educational Psychology
Japanese Journal of Pharmacology
Japanese Psychological Research
Jewish Education
Jewish Social Studies
Johns Hopkins Medical Journal
Journal de Chirurgie
Journal de Physiologie
Journal de Psychologie Normale et Pathologique
Journal for Social Research
Journal for the Scientific Study of Religion
Journalism Quarterly
Journal of Abnormal Psychology
Journal of Aesthetics & Art Criticism
Journal of Air Pollution Control Association
Journal of Allergy
Journal of Analytical Psychology

Journal of Applied Behavioral Science
Journal of Applied Behavior Analysis
Journal of Applied Psychology
Journal of Applied Physiology
Journal of Asthma Research
Journal of Auditory Research
Journal of Bacteriology
Journal of Biological Psychology
Journal of Bone and Joint Surgery
Journal of Business Education
Journal of Cell Biology
Journal of Chemical Education
Journal of Child Psychology & Psychiatry & Allied Disciplines
Journal of Church and State
Journal of Clinical Endocrinology
Journal of Clinical Endocrinology & Metabolism
Journal of Clinical Investigation
Journal of Clinical Pharmacology
Journal of Clinical Psychology
Journal of College Placement
Journal of Communication
Journal of Communication Disorders
Journal of Comparative and Physiological Psychology
Journal of Conflict Resolution
Journal of Consulting Psychology
Journal of Counseling Psychology
Journal of Creative Behavior
Journal of Criminal Law, Criminology & Police Science
Journal of Ecclesiastical History
Journal of Education
Journal of Educational Measurement
Journal of Educational Psychology
Journal of Educational Research
Journal of Emotional Education
Journal of Endocrinology
Journal of Engineering Psychology
Journal of Existentialism
Journal of Experimental Education
Journal of Experimental Medicine
Journal of Experimental Psychology
Journal of Experimental Research in Personality
Journal of Experimental Social Psychology
Journal of General Education
Journal of General Psychology
Journal of Genetic Psychology
Journal of Geography
Journal of Gerontology
Journal of Health & Social Behavior
Journal of Health, Physical Education, Recreation
Journal of Heredity
Journal of Higher Education
Journal of Home Economics
Journal of Human Relations
Journal of Individual Psychology
Journal of Industrial Arts Education
Journal of Immunology
Journal of Investigative Dermatology
Journal of Jewish Communal Service
Journal of Laboratory & Clinical Medicine
Journal of Laryngology & Otology
Journal of Lipid Research
Journal of Marriage & the Family
Journal of Mathematical Psychology
Journal of Medical Genetics
Journal of Mental Deficiency Research
Journal of Mental Subnormality
Journal of Music Therapy
Journal of Negro Education
Journal of Nervous and Mental Disease
Journal of Neurochemistry
Journal of Neurological Sciences
Journal of Neurology, Neurosurgery, & Psychiatry
Journal of Neuropathology & Experimental Neurology
Journal of Neurophysiology
Journal of Neurosurgery
Journal of Nuclear Medicine
Journal of Nutrition
Journal of Occupational Medicine
Journal of Oral Surgery
Journal of Oral Surgery, Oral Medicine & Oral Pathology
Journal of Parapsychology
Journal of Pastoral Care
Journal of Pathology and Bacteriology
Journal of Pediatrics
Journal of Personality
Journal of Personality & Social Psychology
Journal of Pharmaceutical Sciences
Journal of Pharmacology & Experimental Therapeutics
Journal of Projective Techniques & Personality Assessment
Journal of Psychiatric Nursing & Mental Health Services
Journal of Psychiatric Research
Journal of Psychological Researches
Journal of Psychology
Journal of Psychopharmacology
Journal of Psychosomatic Research
Journal of Reading
Journal of Rehabilitation
Journal of Rehabilitation in Asia
Journal of Religion & Health
Journal of Research in Music Education
Journal of School Health
Journal of School Psychology
Journal of Secondary Education
Journal of Social Issues
Journal of Social Psychology
Journal of Special Education
Journal of Speech & Hearing Disorders
Journal of Speech and Hearing Research
Journal of Surgical Research
Journal of Teacher Education
Journal of the Academy of Psychologists in Marital Counseling
Journal of the Acoustical Society of America
Journal of the American Academy of Child Psychiatry
Journal of the American Dental Association

Journal of the American Geriatrics Society
Journal of the American Medical Association
Journal of the American Optometric Association
Journal of the American Psychoanalytic Association
Journal of the American Society for Psychical Research
Journal of the American Society of Psychosomatic Dentistry & Medicine
Journal of the American Statistical Association
Journal of the College of General Practice
Journal of the Experimental Analysis of Behavior
Journal of the Hillside Hospital
Journal of the Irish Medical Association
Journal of the History of the Behavioral Sciences
Journal of the National Cancer Institute
Journal of the National Medical Association
Journal of the Optical Society of America
Journal of the Reading Specialist
Journal of the Society for Psychical Research
Journal of the South African Logopedic Society
Journal of Thoracic & Cardiovascular Surgery
Journal of Thought
Journal of Trauma
Journal of Typographic Research
Journal of Urology
Journal of Verbal Learning & Verbal Behavior
Journal of Virology
Journal of Vocational & Educational Guidance
Judaism
Junior College Journal
Jyvaskyla Studies in Education, Psychology & Social Research

Kansas Studies in Education (Kansas University)
Kentucky School Journal
Khirurgiia, Moscow
Kleine Fachbuchreihe (Kuratorium fur Verkehrssicherheit, Vienna)
Klinische Medizin, Vienna
Klinische Wochenschrift, Berlin
Kolner Zeitschrift fur Soziologie and Sozialpsychologie

LTSH Observer (Lynchburg Training School and Hospital)
Laboratory Investigation
La France Medicale
Lakartidningen, Stockholm
Lancet
Language & Speech
Language Learning
Lärartidningen
Laryngoscope
Laval Medical, Quebec
Learning Disabilities
Lebenshilfe
Liberal Education
Library Quarterly
Life Sciences
London Quarterly and Holborn Review
Lumen Vitae, Belgium
Lupta de Clasa, Rumania
Lutheran Quarterly
Lutheran World

Magyar Pszichologiai Szemle
Main Currents in Modern Thought
Manas
Mathematics Teacher
Mayo Clinic Proceedings
Medecine Infantile
Medical and Biological Illustration
Medical Care
Medical Journal
Medical Journal of Australia
Medical Research Engineering
Medical Science
Medical Thoracalis
Medical World News
Medicine
Medizinische Klinik, Munich
Medizinische Welt, Stuttgart
Megamot
Menninger Quarterly
Mennonite Quarterly Review
Mensch und Arbeit
Mens en Onderneming
Mental Health (National Association for Mental Health, London)
Mental Hygiene
Mental Retardation (AAMD)
Mental Retardation (Canadian ARC)
Mental Retardation Abstracts
Mental Retardation in Illinois
Merrill-Palmer Quarterly
Metabolism
Metabolism, Clinical and Experimental
Michigan Education Journal
Middle States Association of Colleges and Secondary Schools Proceedings
Milbank Memorial Fund Quarterly
Military Medicine
Mind Over Matter
Minerva Medical Journal
Minerva Pediatrica, Turin
Minnesota Journal of Education
Minnesota Studies in Vocational Rehabilitation

Missouri Journal of Research in Music Education
Modern Language Journal
Monographies Francaises de Psychologie
Monographs in the Surgical Sciences
Monographs of the Society for Research in Child Development
Montana Education
Motive
Multivariate Behavioral Research
Multivariate Behavioral Research Monographs
Munchener Medizinische Wochenschrift, Munich
Music Educators Journal
Music Journal
Muslim World
Muzika, Rumania

NCEA (National Catholic Educational Association) Bulletin
NEA (National Education Association) Journal
NEA (National Educational Association) Research Bulletin
Nachal'naya Shkola
National Association of Secondary School Principals Bulletin
National Association of Student Councils Yearbook
National Association of Women Deans and Counselors Journal
National Business Education Quarterly
National Business Education Yearbook
National Council for the Social Studies
National Council of Teachers of Mathematics Yearbook
National Education Association Addresses and Proceedings
National Elementary Principal
National Institute of Industrial Psychology Paper
National Merit Scholarship Corporation Research Reports
National Society for the Study of Education Yearbook
Nation's Schools
Nature
Nauka i Religiya
Nauka i Zhizn'
Nebraska Symposium on Motivation
Nederlands Tijdschrift voor de Psychologie en haar Grensgebieden
Nervenarzt
Neue Zeitschrift fur Systematische Theologie
Neurology
Neuropsichiatria
New England Journal of Medicine
New Scholasticism
Newsletter of Chaplains and Other Religious Workers Subsection AAMD
Newsletter of the International Union for Child Welfare
Newsletter of the New Jersey Association for Brain Injured Children
Newsletter of the Tennessee Association for Retarded Children and Adults
Newsletter--The Aid for Retarded Children, Inc. of Stamford, Connecticut
New York City Board of Education Curriculum Bulletins
New York Society for the Experimental Study of Education
New York State Education
New York State Journal of Medicine
Ninos
Nordisk Medicin
Nordisk Psykologi
North Carolina ARC News
North Central Association Quarterly
Northeastern Studies in Vocational Rehabilitation
Nos Enfants Inadaptes
Nouvelle Revue Theologique
Nova et Vetera, France
Nursing Mirror
Nursing Outlook
Nursing Research
Nutrition Reviews

Obstetrics and Gynecology
Occupational Psychology
Ohio Schools
Ohio State Medical Journal
Ontario Journal of Educational Research
On Your MARC (Massachusetts Association for Retarded Children)
Operations Research
Ophthalmologica
Oral Surgery, Oral Medicine and Oral Pathology
Organizational Behavior & Human Performance
Orientamenti Pedagogici
Orvosi Hetilap
Our Children

PTA Magazine
Pacific Medicine and Surgery
Panminerva Medica
Papers in Psychology
Parents' Voice
Parks & Recreation
Past & Present
Pastoral Counselor
Pastoral Psychology
Peabody Journal of Education
Pedagogisk Forskning
Pedagogisk-Psykologisk Problem
Pediatric Research

Pediatrics
Pediatriya
Pennsylvania Message
Pennsylvania Psychiatric Quarterly
Pennsylvania School Journal
Perception and Psychophysics
Perceptual & Motor Skills
Personnel
Personnel Administration
Personnel and Guidance Journal
Personnel Journal
Personnel Management
Personnel Management Abstracts
Personnel Practice Journal
Personnel Psychology
Perspectives in Biology and Medicine
Pharmacological Reviews
Phi Delta Kappan
Philosophical Review
Philosophy & Phenomenological Research
Philosophy of Science
Phylon
Physical Education
Physical Therapy
Physiologia Bohemoslovenica
Physiology and Behavior
Plastic and Reconstructive Surgery
Pointer
Polish Endocrinology
Polish Medical Journal
Population et Famille/Bevolking en Gezin
Postgraduate Medical Journal
Practical Anthropology
Practica Oto-Rhino-Laryngologica
Praktische Psychologie
Praxis der Kinderpsychologie und Kinderpsychiatrie
Praxis der Psychotherapie
Presse Medicale
Presspoints
Primates
Probleme un Ergebnisse der Psychologie
Proceedings of the Annual Convention of the American Psychological Association
Proceedings of the Annual Meeting of the Gerontological Society
Proceedings of the Indiana Academy of Science
Proceedings of the Invitational Conference on Testing Problems
Proceedings of the National Academy of Sciences, U. S.
Proceedings of the Society for Experimental Biology and Medicine
Proceedings of the Society for Psychical Research
Proceedings of the Southwestern Sociological Association
Programs for the Handicapped
Progress in Cardiovascular Diseases
Project News of the Parsons State Hospital and Training School
Psicologia y Educacion
Psyche, Stuttgart
Psychedelic Review
Psychiatria et Neurologia
Psychiatria et Neurologia Japonica
Psychiatria, Neurologia, Neurochirurgia
Psychiatric Quarterly
Psychiatric Quarterly Supplement
Psychiatric Research Reports
Psychiatrie, Neurologie und medizinische Psychologie
Psychiatry
Psychoanalytic Quarterly
Psychoanalytic Review
Psychologia Africana
Psychologia Africana Monograph Supplement
Psychologia: An International Journal of Psychology in the Orient
Psychologia a Patopsychologia Dietata
Psychologia Wychowawcza
Psychological Abstracts
Psychological Bulletin
Psychological Monographs
Psychological Record
Psychological Reports
Psychological Research Bulletin
Psychological Researches
Psychological Review
Psychologie Francaise
Psychologie und Praxis
Psychologie v Ekonomicke Praxi
Psychologische Beitrage
Psychologische Forschung
Psychologische Rundschau
Psychology
Psychology in the Schools
Psychology Today
Psychometrika
Psychonomic Monograph Supplement
Psychonomic Science
Psychopharmacologia
Psychopharmacology Bulletin
Psychophysiology
Psychosomatic Medicine
Psychosomatics
Psychosynthesis Research Foundation
Psychotherapy and Psychosomatics
Psychotherapy: Theory, Research & Practice
Pszichologiai Tanulmanyok
Public Health Reports
Public Health Service Publication
Public Opinion Quarterly
Public Personnel Review
Purdue Opinion Panel Poll Report

Quarterly Journal of Experimental Psychology
Quarterly Journal of Speech
Quarterly Journal of Studies on Alcohol

Radiation Research
Radiologia Clinica et Biologica
Radiology
Rajasthan University Studies
Rational Living
Reading Research Quarterly
Reading Teacher
Record
Recreation for the Handicapped
Recreation in Treatment Centers
Recreator
Reference Report (Washington State Department of Institutions)
Reformed Review
Rehabilitation
Rehabilitation in Australia
Rehabilitation Literature
Rehabilitation Record
Religion in Life
Religious Education
Remedial Education
Report from the Institute of Education, U. Turku
Reports from the Psychological Institute, U. Helsinki
Reports from the Psychological Laboratory, University of Southern California
Reports of the Institute for Science of Labour, Tokyo
Research Bulletin of the Department of Psychology, Osmania U.
Research Bulletin of the National Institute for Educational Research, Tokyo
Research Project, U. Canterbury
Research Quarterly
Research Reporter
Research Review (Washington State Department of Institutions)
Restoration Quarterly
Review and Expositor
Review of Czechoslovak Medicine
Review of Educational Research
Review of Existential Psychology & Psychiatry
Review of Religious Research
Revista Argentina de Psicologia
Revista Brasileira de Deficiencia Mental
Revista de Etnografie si Folclor
Revista del Instituto de Ciencas Sociales
Revista de Neuro-Psiquiatria
Revista de Pedagogie, Rumania
Revista de Psicoanalisis
Revista de Psicologia General y Aplicada
Revista de Psicologia Normal e Patologica
Revista de Psicopatologia, Psicologia Medica y Psicoterapia
Revista de Psihologie
Revista de Psiquiatria y Psicologia Medica
Revista de Statistica
Revista do Instituti Ciencias Sociaes da Universidade do Brasil
Revista do Instituto Ciencias Sociaes da Universidade do Brasil
Revista Interamericana de Psicologia
Revista Mexicana de Psicologia
Revista Mexicana de Sociologia
Revue de L'Universite d'Ottawa
Revue de Medecine Psychosomatique et de Psychologie Medicale
Revue de Psychologie Appliquee
Revue de Psychologie des Peuples
Revue D'Histoire Ecclesiastique
Revue d'Hygiene et de Medecine Sociale
Revue Francaise de Psychanalyse
Revue Francaise de Sociologie
Revue Internationale de Sociologie
Revue Neurologique
Revue Roumaine des Sciences Sociales: Serie de Psychologie
Ricerca Scientifica
Ridge News, State Home and Training School, Wheat Ridge, Colorado
Rivista Dell'Instuto Seroterapico Italiana
Rivista di Psicologia
Rivista di Psicologia della Scrittura
Rivista di Psicologia Sociale e Archivio Italiano di Psicologia Generale e del Lavoro
Rocky Mountain Social Science Journal
Royal Society of Medicine, Proceedings
Rural Sociology

SK&F Psychiatric Reporter
Sak'art'velos SSR Mets'nierebat'a Akademiis Moambe
Sbornik Praci Filosoficke' Fakulty Brnenske' University
Scandinavian Journal of Psychology
Scholastic Coach
School Activities
School and Community
School and Society
School Arts
School Management
Schoolmen's Week, University of Pennsylvania
School Musician Director and Teacher
School of Education Bulletin, Indiana University
School Review
School Safety
School Science and Mathematics
School Shop
Schweizerische Medizinische Wochenschrift, Basel
Schweizerische Zeitschrift fur Psychologie und ihre Anwendungen
Science
Science Education
Science Journal
Sciences
Sciences Ecclesiastiques, Belgium
Science Teacher
Scientia Paedagogica Experimentalis
Scientific American

Scottish Medical Journal
Securitas
Sight-Saving Review
Slow Learning Child
Smith College Studies in Social Work
Social Casework
Social Education
Social Forces
Social Problems
Social Psychiatry
Social Research
Social Science
Social Science & Medicine
Social Science Information
Social Science Quarterly
Social Service Review
Social Studies
Social Work
Sociologia, Brazil
Sociological Abstracts
Sociological Bulletin
Sociological Review
Sociologicky Casopis
Sociology and Social Research
Sociology of Education
Sociometry
Sotsiologiia VSSR, USSR
South African Medical Journal
Southern Medical Journal
Southern Quarterly
Southwestern Journal of Anthropology
Southwestern Journal of Theology
Sovetskaya Pedagogika
Soviet Education
Soviet Review
Soviet Sociology
Sovremennye Problemy Deyatel'nosti i Stroeniya Tsentral'noi Nervnoi Sistemy
Sozial Welt, Germany
Special Education
Special Education in Canada
Special Education Review
Speech Monographs
Speech Teacher
Steaua, Rumania
Steroids
Studia Psychologica
Studi e Richerche di Psicologia
Studies and Research
Studies in Art Education
Studies in Higher Education
Studies on the Left
Surgery
Surgery, Gynecology and Obstetrics
Surgical Clinics of North America

TR Times
Tarbiz, Israel
Teachers College Journal
Teachers College Record
Teaching and Training
Technical Bulletin of the Registry of Medical Technologists
Texas Medicine
Texas Outlook
Texas Reports on Biology and Medicine
Theology and Life
Theology Today
Theoria: A Swedish Journal of Philosophy
Theory into Practice
Thorax
Tideskrift for den Norske Laegeforening, Oslo
Tijdschrift voor Geneeskunde, Louvain
Tijdschrift voor Zwakzinnigheid en Zwakzinnigenzorg
Times Educational Supplement, London
Tohoku Journal of Experimental Medicine
Tohoku Psychologica Folia
Traffic Safety Research Review
Training School Bulletin
Traite' de Psychologie Experimentale
Trans-Action
Transactions of the New York Academy of Sciences
Transactions of the Westermarck Society
Transfusion
Transplantation
Travail Humain
Trudy Leningradskogo Nauchno-Issledovatel'skogo Instituta Ekspertizy Trudosposobnosti i Organizatsii Truda Invalidov

Ugeskrift for Laeger, Copenhagen
Union Medicale du Canada
United States Office of Education Publications
Universities Quarterly
Urban Studies
Urim

V.O.C. Journal of Education
Vascular Diseases
Vestnik Akademii Meditsinskikh Nauk SSSR
Vestnik Akademii Nauk SSSR
Vestnik Oftalmologii, Moscow
Vestnik Otorinolaringologii, Moscow
Vestnik Vysshei Shkoly
Viata Romineasca
Victoria University of Wellington Publications in Psychology
Virginia Journal of Education
Virology
Vocational Guidance Quarterly
Voix Silence
Volta Review

326-079 O - 68 - 12

Volunteer Council News (Lynchburg Training School and Hospital)
Voprosy Filosofii
Voprosy Psikhologii
Voprosy Sravnitel'noi Fiziologii Analizatorov
Vrachebnoe Delo, Kiev

WHO (World Health Organization) Bulletin
WHO (World Health Organization) Chronicle
Warren G. Murray Children's Center (State of Illinois Department of Mental Health)
Washington University Department of Psychology Technical Report
Welfare in Review
Welfare Reporter
Wesleyan Studies in Religion
Wiener Klinische Wochenschrift
Wiener medizinische Wochenschrift
Wilson Library Bulletin
Winnower
Wisconsin Journal of Education
Works of the Institute of Higher Nervous Activity: Pathophysiological Series
World Year Book of Education

Yale Journal of Biology and Medicine
Young Children

Zeitschrift Evangelische Ethik
Zeitschrift Fuer Kirchengeschichte
Zeitschrift für Alternsforchung
Zeitschrift für die Gesamte Innere Medizin und Ihre Grenzgebiete
Zeitschrift für Experimentelle und Angewandte Psychologie
Zeitschrift für Heilpadagogik
Zeitschrift für Kinderheilkunde, Berlin
Zeitschrift für Psychologie
Zeitschrift für Psychosomatische Medizin und Psychoanalyse
Zeitschrift für Psychotherapie und medizinische Psychologie
Zeitschrift für Theologie und Kirche
Zeitschrift für Tierpsychologie
Zeszyty Naukowe
Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova
Zhurnal Obshchei Biologii
Zhurnal Vysshei Nervnoi Deyatel' nosti
Zion

PAGES 691-744
AT THE BEGIN

01-744 (INDEX) PHOTOGRAPHED
BEGINNING OF VOLUME.

MENTAL RETARDATION ABSTRACTS

This is the last issue of Mental Retardation Abstracts which will be published by the National Clearinghouse for Mental Health Information. Beginning with Volume 6, No. 1, the Abstracts will be published by the Division of Mental Retardation, Rehabilitation Services Administration. All correspondence should therefore be directed to the Division of Mental Retardation.

Questions about the services of the Division of Mental Retardation, requests to be placed on the mailing list to receive Mental Retardation Abstracts, and requests for single copies and back issues should be addressed to:

Mental Retardation Abstracts
Division of Mental Retardation
Rehabilitation Services Administration
4040 Fairfax Drive
Arlington, Virginia 22203

CHANGE OF ADDRESS OR REMOVAL OF NAME

Please affix Abstracts mailing label here and mail to Division of Mental Retardation, Rehabilitation Services Administration, 4040 Fairfax Drive, Arlington, Virginia 22203. Thank you.

(Fill in below only for change of address. Please print clearly.)

NAME: Initial Initial Last

Organization (Leave blank if none)

Number and Street Address

City **State**

Country (if other than U.S.) **Zip Code (if U.S.)**

I wish to discontinue receiving this publication. Please remove my name from your mailing list. (MRA) ☐

HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
HEALTH SERVICES AND MENTAL HEALTH ADMINISTRATION
NATIONAL INSTITUTE OF MENTAL HEALTH
5454 WISCONSIN AVENUE
CHEVY CHASE, MARYLAND 20203

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
Health Services and Mental Health Administration
NATIONAL INSTITUTE OF MENTAL HEALTH